FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN A LESS DEVELOPED COUNTRY: SUDAN, 1960-1988

by

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ABSTRACT

There has been a marked resurgence of academic interest on the theory of finance and growth in Less Developed Countries (LDCs) over the last two decades. It is currently more widely believed among economists that the development of the financial and capital markets of a developing country would enhance the growth of its real economic activities. Meanwhile, with external capital increasingly running short of LDCs' expectations, reliance on domestic sources of finance is becoming more critical than ever before.

Sudan, unlike most LDCs, is a country with huge untapped natural resources. Yet, its development plans have consistently been frustrated by the inadequacy of both internal and external sources of finance. This study concerns itself with the structure, nature, and performance of monetary and financial policies and institutions, and their role in development financing in Sudan. As such, it attempts to make an empirical contribution to the literature on finance and development in LDCs.

It is argued in this study that the extent to which financial variables may influence real variables, would depend on how well-suited financial institutions and instruments are to provide development finance as well as non-finance or equity-related services. Serious doubt is cast on the ability of liberalized interest rates to bring about such a financial structure, and on the capacity of an unregulated financial system to allocate resources in an economically efficient way.

The financial system of Sudan, which is bank-based, has little contribution to term and/or equity financing, entrepreneurial development, and enterprise initiatives. But, ill-studied monetary and credit policies, associated with considerable fiscal imbalances, and accelerating inflation, are partly to blame for inadequate development and performance of financial intermediaries. In particular, the long-term development of financial and capital markets has

been overrode by the quest for short-term economic stabilization.

The study is particularly timely and significant considering the socio-economic, and legislative developments that have occurred in Sudan during the late 1970s and the 1980s. The most important of these developments is the renaissance of Islamic ideals, which is manifested in the establishment of various banks and non-bank financial intermediaries that adhere to Islamic principles of finance. The cornerstone of these principles is the abolition of predetermined rates of interest. We examine the theory of Islamic finance, and provide an empirical assessment of the performance of Islamic banks in Sudan, pinpoint their limitations and suggest a basis for future policy. It has been argued in this study that Islamic banking in particular poses a series of problems, which urge fundamental restructuring of financial and capital markets, as well as the regulatory and supervisory apparatuses.

While the Islamic modes of finance, which call for participation and increased involvement of financial firms in various aspects of business, may boost the rate of real capital formation and the growth of entrepreneurship, they have an ambiguous impact on saving accumulation. Moreover, the Islamic instruments of finance tend to be less liquid than conventional ones, and may entail substantial costs to banks. We demonstrate that for Islamic finance to be successful there needs to be a well-functioning securities market.

Finally, it is shown, in the context of a macroeconomic model of the Sudanese economy, that a low and stable rate of inflation is critical for monetary or fiscal expansion to have predictable effects on real output growth, and that policies to stimulate aggregate demand and output should at the same time attempt to improve the supply side of the economy in order to reduce inflationary repercussions.

CHAPTER 1

INTRODUCTION

1.1 Introduction:

Economic development in most less developed countries (LDCs) is constrained, primarily, by lack of real capital. It has often been argued that, with inadequate domestic sources of finance, this constraint can only be removed through the flow of capital from rich to poor countries. However, despite huge capital inflows from abroad during the last three decades, few LDCs have managed to achieve a reasonable level of economic development(1). Notwithstanding the question of whether foreign capital substitutes or augments domestic saving, external aid, official or private, has recently become more difficult to obtain. As a result, reliance on domestic sources of finance is becoming more critical than ever before.

Efforts to mobilize domestic resources for capital formation purposes would require a finance and credit mechanism that is capable of effecting the volume and composition of national savings as well as their allocation to the most productive projects from society's viewpoint. There is, however, a considerable controversy over the appropriate institutional framework, private or governmental, through which potential surplus should be mobilized and transmuted to productive investment opportunities. There are conceivably many methods of effecting a transfer of resources. For instance, potential national savings may be mobilized by government monetary and fiscal operations, financial institutions or a combination of various mechanisms.

In view of inflexibility of tax systems in LDCs, and the dangers of inflationary finance(2), where there are already

high rates of inflation in these countries, and other structural rigidities, it has been strongly argued that a well-developed financial system appears to be a more efficient mechanism for resource mobilization. This does not mean that the financial system should replace other mechanisms, but the argument for it runs along the lines of the argument for a free-enterprise economy, where perfect market conditions and rational behaviour are assumed to prevail. The development of the financial system, in terms of broadening the range of both financial institutions and instruments, is seen as a stimulus for savings and investment, and via that, real growth. For example, Shaw (1973) argues that "where finance is shallow ...an economy depends relatively heavily on its government fiscal budget and on its international capital accounts for the flows of savings that finance capital growth. Financial deepening (development) eases the strain on taxation and moderates demand for foreign savings" (P.8).

The objective of this chapter is to review the general theoretical and empirical literature on the relation between financial development and economic growth in a growing economy, and to state the objectives as well as the issues to be examined in the rest of the thesis. Thus, section (1.2) discusses the role of monetization in economic growth, whereas section (1.3) deals with financial structures and instruments in LDCs. In section (1.4), the importance of the domestic financial system in economic development is examined, while section (1.5) reviews empirical evidence on the correlation as well as the causality between financial and real development. Section (1.6) considers the limitations of financial intermediation in LDCs. Sections (1.7) and (1.8) present the purposes, scope, methodology and structure of the study.

1.2 Monetization and Economic Growth in Developing Countries:

The use of money is a necessary condition for financial development. The term monetization refers to the enlargement, through time and space, of the monetary economy via the use of money in all its functions as a medium of exchange, a unit of account and as a store of value. The degree of monetization, as commonly measured by the proportion of total output paid for in money by purchasers, varies across LDCs, but seems to be considerably low in some of them(3). It may be appropriate, at this stage, to distinguish monetization from two related concepts; commercialization and financial intermediation.

While monetization connotes the mere extension of the use of money, commercialization signifies the prevalence of profit-generation motives regardless of the degree of monetization. It involves production largely for sale on the market, though production inputs, e.g. family labour, may not be paid for in money. The extent of commercialization may be measured by the ratio of goods and services sold to total output(4). But, since the use of money facilitates the exchange of goods and services, it may be seen as a necessary condition for commercialization. Financial intermediation, on the other hand, refers to the process of mediation, through institutions and instruments, between ultimate lenders and ultimate borrowers of funds. Again, monetization is a necessary, but obviously insufficient, condition for financial intermediation. As we will see in this and in the following sections, monetization and intermediation can be interdependent and concurrent in a developing economy. But, the contribution of financial intermediation to economic growth may be substantially greater than that of monetization alone.

The use of money as the only form of financial assets in

the economy[5] possesses the potential of generating real investible surpluses in several ways. First, replacement of barter or commodity exchange by money raises the demand for money, as a means of exchange and as a store of value, relative to income, and releases real resources of an equivalent value. The issuer of money, usually the government, can appropriate these resources and raise the level of investment in the economy (Thirlwall, 1983). Clearly, this source of investible surplus declines in importance as the economy moves towards full monetization. Second, the use of money also saves time and reduces transaction costs by avoiding double coincidence of wants, which is a characteristic of commodity exchange. Third, monetization, by facilitating indirect exchange of goods and services, enlarges markets over time and space, and creates a scope for division of labour by production type and process.

Nevertheless, the role of monetization in mobilizing, particularly private voluntary, savings would be limited in the absence of financial intermediaries. In such a situation investors can finance their capital outlays either out of their own prior-savings or borrow informally from relatives, friends or local money-lenders. Because of such market imperfections as monopoly, high risk, and high costs of administering small loans, interest rates charged, or implicit in informal lending[6], are likely to be prohibitive relative to expected returns on available investment projects. Furthermore, the size of funds transacted in unorganized money markets is usually too small to permit relatively large scale investments to be undertaken; the reason being the lack of a mechanism through which local money lenders may pool small individual or household savings. In effect, it is normally the needy households and farmers who borrow in curb markets, largely for consumption purposes.

Thus, in the absence of formal financial intermediaries,

those able and risk-taking entrepreneurs who wish to invest in excess of their own savings may not be able to do so, and relatively large investment projects would not be feasible irrespective of their expected return. The nature of both savings and investments in this economy provides no strong growth stimulus. As Furness (1975) points out, savings can only accumulate in the form of either tangible commodities or stocks of money, while the majority of savers do not possess the managerial expertise, entrepreneurial ability and technical know-how to be able to transform them into productive capital assets. In either case the incentive to save is likely to be weak. In the case of holding savings in the form of tangible goods, there are considerable risk and costs involved; risk due to loss, depletion and change in value, and costs arising from safekeeping and assets' management. In the event of money hoards, the real value of savings is subject to fluctuation, assuming a non-zero inflation rate, on top of the fact that money has no intrinsic value. It may, therefore, be argued that under these conditions, the level of savings would depend on, and can actually be inhibited by lack of, investment opportunities that can be perceived by local savers/investors. Conversely, a wide range of promising investment projects may not be undertaken as there is no mechanism to harness savings. The composition of wealth and output will, accordingly, be in such a way as to keep the economy within the confinements of traditional technology and production methods. Before turning to their importance, we examine below the structure of financial markets and instruments in LDCs.

1.3 Financial Institutions and Instruments in LDCs:

The extent to which monetary and financial variables may influence the real or expenditure sector of the economy may

not be invariant to its financial structure. Though there is unlikely to be a financial structure identical across developing countries, the financial systems of these countries can, generally, be characterized in terms of the following: (1) composition of financial institutions; (2) the existence or lack of capital and securities markets; (3) the spectrum of assets and liabilities or financial instruments available to various sectors in the economy; and (4) financial dualism.

The network of financial institutions and markets that form the modern payments and assets transformation mechanism in LDCs encompasses a variety of institutions. The most important of these institutions[7] are central banks, commercial banks, insurance companies, pension funds and other specialized financial intermediaries such as development banks and agricultural credit co-operatives. But, in a typical developing country, the banking sector assumes an overwhelming importance in terms of both size and strategic functions. Although various financial institutions intermediate between savers and ultimate borrowers, commercial banks in particular may have some distinctive functions that merit attention. As a group commercial banks can create money as their deposits are easily transferable by cheques, and can, therefore, become a form of money. This has two important implications. First, bank lending can create additional bank deposits, because when banks extend loans a high proportion of the money lent may be redeposited with them. The resulting increase in banks' deposits means that bank credits can multiply out of a given amount of initial deposits. Second, the banking system, being able to expand or contract money supply is crucial for the effectiveness of monetary policy. However, it needs to be stressed that with recent financial innovations and development, especially in the West, non-bank financial intermediaries have come to

perform almost the same role as banks. For instance, building societies in the United Kingdom issue chequebooks, which have the same purpose as those issued by banks.

The capital and securities markets that exist in LDCs, though few, are rarely effective[8]. Securities markets normally consist of two segments; a primary market in which financial liabilities and claims, such as bonds, government stocks and company shares may be created, and the well-functioning of this market requires a secondary securities market in which securities already outstanding can be traded. Marketable securities and instruments of direct finance are relatively less important in private sector portfolios in LDCs, and even if primary markets exist, secondary markets are narrow and thin.

Accordingly, financial markets in LDCs, which are bank-based, are dominated by the creation of indirect liabilities and claims such as bank deposits and loan certificates. Banking liabilities, in turn, consist largely of checking deposits, which may not be adequate for long-term or development financing unless substantial maturity transformation takes place. The implications of such financial structure, and narrow range of financial instruments, are that: (1) expenditure financing by deficit spending units depends primarily on borrowing from banks and other financial intermediaries, besides retained earnings; (2) there is always a shortage of long-term, and equity, finance; and (3) monetary policy works largely via directives and direct controls by the authorities, whereas in a securities-based financial system indirect methods of monetary control such as open market operations are more important.

Financial dualism connotes the existence of unorganized markets[9] alongside modern financial and capital markets, with varying degrees of efficiency and rates of interest. An

important repercussion of financial dualism is that it restricts the growth of formal financial intermediaries, while weakening the impact of monetary policy, as it operates outside the domain of monetary authorities.

Finally, in most LDCs, the government plays a leading role in the development and regulation of financial institutions. Many governments endeavour to widen their financial markets and instruments via the issue and sale of government securities and stocks, but government-controlled banks are commonplace in LDCs, where the authorities also control such important variables as interest rates. These policy issues and their probable impact on financial development, that is the promotion and availability of both financial institutions and instruments that fully accomodate savers-investors needs, will be examined in detail in the following chapter. Meanwhile, we discuss below how financial development, by performing a variety of functions, can influence economic growth.

1.4 The Importance of Financial Development in Economic Growth:

This section examines those functions of the financial system that seem to have a more direct bearing on the dynamic process of economic development. The financial system is said to affect the saving-investment process, and thereby economic development by: (1) increasing the quantity, and improving the structure, of real savings; (2) improving the structure and average productivity of investments; and (3) providing entrepreneurial skills and financial guidance to the economy as a whole. Although these functions are interrelated, it might be illuminating to discuss them separately.

1.4.1 The Level and Structure of Savings:

Financial development may influence the volume and

composition of savings in several ways. Firstly, the evolution of financial instruments, such as bank deposits, allows a separation between the act of savings and that of investment over both time and space. This would also alter the composition of savings, with less savings now being held in the form of idle money hoards or unproductive durable assets, simply because financial assets are more divisible, liquid, safer and less costly to maintain. Thus, financial intermediaries can attract the savings, particularly, of those with small amounts or who are unable for a variety of reasons to invest. Secondly, the range of services provided, in particular by more specialized financial institutions, may boost the stimulus to save. For example, insurance firms can induce savings by those who wish to protect themselves or properties against the consequences of unpleasant and costly events, while pension funds help the accumulation of savings by those who wish to secure sufficient income after retirement. Moreover, as Goodhart (1975) stresses, financial intermediaries alleviate market imperfections caused by economies of scale in financial transactions, in information gathering, and portfolio management. This implies that financial institutions may provide the information required by potential savers to efficiently allocate their incomes between present and future needs. Accordingly, a considerable proportion of current income, which would otherwise be consumed or even wasted, may be saved in the form of financial assets. The extent to which financial intermediaries affect savings would depend partly on how widespread they are and partly on the range of facilities provided. Experience in LDCs, however, shows financial services to be concentrated in major urban centres and failing to penetrate rural enclaves(10).

Finally, the literature on finance and development has traditionally focussed on the role of the rate of interest in

generating savings, by inducing a reduction in consumption at a given level of income. This is so because the availability of interest-bearing financial assets makes present consumption more expensive relative to future consumption, and, therefore, people might be induced to consume less today (substitution effect). But, as the income position of savers improves, they might, at the same time, tend to consume more (income effect). This is particularly true where savings are made for a certain target(11), which is a common practice in LDCs. Therefore, the possibility of an increase in savings under these circumstances is theoretically ambiguous as it depends on the balance of the income and substitution effects. At the empirical level the relation between savings and the interest rate is also far from being clear. Mikessel and Zinser (1973) have summarized the evidence on this relation found by a number of econometric studies and concluded that interest rates may be more powerful in altering the channels through which savings flow than affecting the saving-expenditure decisions of consumers. Furthermore, a recent study by Lanyi and Rusdu (1983) covering 21 developing countries suggests that positive real rates of interest stimulate output growth and this stimulus is transmitted mainly through the intermediation of financial assets accumulation. This, of course, does not imply a net increase in overall savings. It is the change in the structure, or more precisely financialization, of savings that the recent literature on financial development and growth has come to emphasise most.

The discussion above suggests that financial intermediation can at least influence the composition of savings, and this may help to achieve a more efficient allocation of investible resources.

1.4.2 The Structure and Efficiency of Investment:

The financial system can influence the structure and productivity of investment through maturity transformation and risk transfer; by widening the array of financial claims to fully accomodate the preferences of investors; pooling small savings towards relatively large projects; and by reducing the cost of finance. In this way, the financial system raises the ratio of capital formation to national output provided that the following assumptions hold(12). First, that economic agents differ in their attitudes towards risk and uncertainty, and in the value they attach to future relative to present utilities; second, there is an unequal distribution of entrepreneurial skills, knowledge and experience; third, there exist economies of scale within a production unit, and of externalities within the economy as a whole; and, finally, investment projects are indivisible and their expenditure requirements might be far in excess of the savings of any individual unit.

Financial intermediation allows those endowed with entrepreneurial, risk-taking, and managerial skills to undertake investment without a corresponding savings decision. Meanwhile, by pooling small savings, financial intermediaries can finance lumpier and large scale investment projects, which by virtue of their size may embody technological improvements and yield higher returns. Moreover, by accepting deposits, financial institutions transfer part of the risk to themselves, and through lending they pass part of that risk to investors. And, when operating at larger scale and wider space, they can also achieve economies of scale in pooling the default risk of borrowers as well as in reducing the cost of both borrowing and lending. Again, they can afford recruiting expertise, and creating methods to investigate the risk and return characteristics of various investment proposals. Accordingly,

they can select investment portfolios that minimize risk and maximize returns, and determine the appropriate terms of lending. Since they also determine rewards to savers, financial institutions can sufficiently narrow the differential between deposits and lending rates. The above arguments are enhanced by considerations of "financial specialization at which each institution becomes very adept and can thereby further reduce the real cost of finance" (Patrick, 1966). Hence, by pooling default risk and through specialization, financial intermediation can either raise returns to savers, lower costs to borrowers, or both; and this would improve the structure and efficiency of saving as well as investments.

Through maturity transformation, i.e. by accepting short-term deposits and extending long-term loans, banks can play a particularly important developmental role. Maturity transformation is possible provided that the number of depositors at each institution is sufficiently large and that only a fraction of deposits is needed to meet withdrawal requirements in the short-run. It is also significant because most development projects have long gestation periods and, therefore, can only be financed through long-term credits.

The analysis thus far suggests that financial intermediation can raise the structure and average productivity of investments, provided that credits are allocated on productivity basis. This envisaged allocative efficiency represents the main rationale for the promotion and sometimes regulation of the financial system. However, as we will see in chapter 2, the allocative mechanism of financial intermediaries, especially in LDCs, is subject to considerable constraints.

1.4.3 Financial and Entrepreneurial Development:

Financial development is said to enhance the growth of

entrepreneurial talents, and capital formation. "Since financial institutions tend to specialise in lending activities, and can afford to employ experts, they can give valuable financial guidance and technical assistance to borrowers" (Furness, 1975). These non-credit services might be part of efforts by financial institutions to follow up the activities they finance in order to reduce risk. Furthermore, since these institutions have to pay competitive interest rates to depositors, they must as profit-maximizers make sure that a high proportion of their deposits is productively utilized in the form of loans, equity, or a combination of the two. In this respect, Cameron (1972) stressed that "instead of restricting themselves to a purely intermediary function, bankers may actively seek out and exploit profitable undertakings in manufacturing, commerce or any other activity".

This function, Cameron adds, has been historically of great importance in some developed countries such as Germany, where a close linkage between corporate and financial firms exists. Banks in Germany do not only provide credit to investors, but they also take equity in business, and accordingly develop interest in various aspects of business such as management[13]. (The relevance of the German banking experience to Islamic banks is elaborated in chapter 5.) In developing countries, the need for specialized finance and finance-related services is manifested in the establishment of specialized financial institutions. Besides providing managerial, technical and financial assistance in their areas of specialization, these institutions may undertake research and identify feasible investment undertakings. Accordingly, they may help potential investors to perceive these investment opportunities or act as entrepreneurs themselves. In either case the outcome would be a more rapid development of entrepreneurial talents and a more efficient utilization

of financial resources.

To sum up, financial development by the separation of saving and investment decisions, financialization of savings, promotion of entrepreneurship and efficient allocation of resources may boost the process of economic growth. In practice, however, though there exists a strong positive correlation between financial and real development the direction of causality is ambiguous.

1.5 Financial and Real Development: Evidence and Causality Test:

In quantitative terms, there is an indisputable positive correlation between financial development and real output growth. Financial development may be measured(14) by the ratio of a country's total financial assets to its national wealth (net assets plus net claims against the rest of the world). This ratio is known as the Financial Interrelations Ratio, FIR, (Goldsmith, 1969), and the greater it is in value the higher the country's level of financial development. Several other indicators of financial development may be found in the literature. For example, the grouping of financial assets by type of instrument and by type of holder may be used to assess the importance of different types of financial intermediaries in the economic development of a particular country.

Goldsmith (ibid) studied the financial history of many nations over 150-200 years, and concluded that, with exception to centrally planned economies, there is a fairly common path of financial progress characterized by a uniform behaviour of the FIR, and by the importance of the banking system. The ratio rises with economic development, but the importance of banks, which first head the process of financial development, declines as both financial and real growth proceed. Subsequent as well as early studies(15) have

almost all arrived at the same conclusion that financial development, however defined, has been always and everywhere associated with real development. Thus, the correlation between financial and real variables appears to pose no question, and may partly provide an explanation for the concern of LDCs with the promotion of their financial systems.

But, the question of which sector leads remains unsettled. For example, Gurley and Shaw (1955) argue that there can be two-way causation between real and financial growth in the sense that the financial sector develops in response, but then contributes, to real growth. Yet, later Gurley (1967) wrote that recent experience suggests that banking systems as intermediaries are not highly essential to the growth process. This implies that it is real growth that causes financial growth.

However, Patrick's (1966) analysis provided a conceptual framework, stimulating a number of empirical studies to be conducted on the causality issue. His model distinguishes between two phenomena; demand-following and supply-leading financial development. The former phenomenon denotes the situation where the creation of financial institutions occurs in response to demand for their assets and services by businesses, households and individuals. This demand is contingent upon real income growth, and so the financial sector responds passively to it. In contrast, supply-leading finance represents a situation in which the creation of financial assets and liabilities precedes demand for them. Thus, supply-leading finance gives an impetus to real development. Patrick stresses that the direction of causality changes over the process of economic development; the supply-leading aspect dominates until this process reaches a state of sustained growth. As this state begins, demand-following financial response assumes greater

importance. He shows that the financial history of the USA and Japan over the last century or so is strongly consistent with his analysis.

Econometric investigations of causality are facilitated by the availability of strong causality tests[16], such as the one developed by Granger (1969). This most commonly applied test is based on the incremental forecasting power of the past (or past plus present) values of one variable on another. The test can be used to detect the presence of not only uni-directional causality, but also instantaneous causation and independence between the variables considered. Mathematically, the Granger's causality test can be represented as follows.

Let U_t be a certain information set, containing all past and present information, and consisting of (X,Y) the bivariate process under study. This process is assumed to be jointly covariance stationary. Then, let $U^* = (U_\tau; \tau<t)$ represent the set U, but excluding present information. Similarly, define X^* and Y^*. Accordingly, Granger provides the following definitions of causality:

1. Variable X causes Y if $\sigma^2(Y/U^*) < \sigma^2(Y/U^* - X^*)$; where $\sigma^2(Y/U^*)$ is the minimum prediction error of Y given the information set U. This means that X causes Y if the prediction of Y based on all past information has a smaller error than the prediction of Y using all past information excluding X^*.

2. There is two-way causation or feedback between X and Y if $\sigma^2(Y/U^*) < \sigma^2(Y/U^* - X^*)$ and $\sigma^2(X/U^*) < \sigma^2(X/U^* - Y^*)$, and

3. There is no relation between X and Y if $\sigma^2(Y/U^*) = \sigma^2(Y/U^*-X^*)$ and $\sigma^2(X/U^*) = \sigma^2(X/U^*-Y^*)$. That is if the inclusion of the past values of one variable does not lower the minimum prediction error variance of the other variable, the two variables are said to be independent.

On the assumption that U = (X,Y) and that X and Y are a pair of linear covariance-stationary process, we can write:

$$(1.1) \quad X_t = \Sigma^{m}_{i=1} a_i X_{t-i} + \Sigma^{n}_{j=1} b_j Y_{t-j} + e_t$$

$$(1.2) \quad Y_t = \Sigma^{m}_{i=1} c_i Y_{t-i} + \Sigma^{n}_{j=1} d_j X_{t-j} + v_t$$

Where e_t and v_t are the error terms and a_i's, b_j's, c_i's and d_j's are parameter estimates. The above equations represent the optimum prediction model, which is confined to a linear[17] one. The hypotheses on causality between X and Y are tested by estimating these equations and performing the conventional F-test as to whether b_j and d_j are significantly different from zero. X causes Y if only the hypothesis that $d_j = 0$ is rejected, and vice versa. Feedback occurs if both b_j and d_j are significantly different from zero. Conversely X and y are independent if $b_j = d_j = 0$.

Available econometric tests seem to suggest that financial development in real terms is a requisite of modern economic growth, although some critics, for example Stammer (1972), would argue that financial intermediation has been less important than self-finance in the economic development of many countries.

Gupta (1984) studied the relationship between financial development, proxied by various measures[18], and real development, as indicated by the index of industrial growth, using time series data for 14 LDCs. He obtained three basic results. First, in the case of eight countries only the supply-leading phenomenon existed, second, there was no evidence of strictly demand-following finance in any case, and third, only two countries exhibited a simultaneous dependence between financial and real development. Similar evidence was also found by Jung (1986) with respect to 41 developing and 5 developed countries. In his study, there was evidence that both types of supply-leading and demand-following finance exist. But, generally, the causation runs

from financial to real development in LDCs, and vice versa in developed countries. Mixed results were also found by Odedokun (1989) with respect to Nigeria. Using data on M_2, domestic credit to the private sector and gross domestic product for the period 1960-88, we find a strict causality running from financial to real development in Sudan (see chapter 4).

The evidence discussed above suggests that financial development may engineer real development. However, the conclusion of this evidence is tentative, and the econometric results must be interpreted with caution. Firstly, because the test, being applied to a highly aggregated data, does not tell us about the structural changes and channels through which financial growth can affect real variables in the economy. Secondly, as the bivariate causality test does not allow for the inclusion of other important variables in the information set, it may result in specification error. Thus, one can cast doubt, at least, on the relative importance of the financial factor compared to the omitted variables in explaining growth in real output.

1.6 Limitations of Financial Intermediation in LDCs:

The discussion of the importance of financial institutions and instruments indicates that they can play an instrumental role in the process of economic development. The literature, however, abstracts from a set of assumptions, which may not hold in the context of a developing economy. For example, for financial intermediaries to fulfill their functions, it is assumed that there exist reasonably perfect markets and profit-maximizing behaviour. While distortions and controls, notably over prices, foreign trade and exchange rates, are commonplace in LDCs, unrestrained profit-maximizing behaviour may undermine the social and economic priorities of the nation. Quick return and risk considerations may lead to an

allocation of resources that is excessively geared towards short-term projects, normally in the sphere of trade. Thus, financial institutions may, in practice, provide little or no stimulus to real capital formation through equity and long-term finance. Additionally, financial intermediaries in LDCs, though mostly promoted by deliberate government policy, are usually rendered less effective by its own monetary and financial policies. For instance, interest rate controls have been widely blamed for discouraging the growth of financial intermediation and the pace of resource transformation. This is so because nominal interest rate controls, coupled with high rates of inflation in most countries, may inhibit the growth of bank deposits and reverse the process of monetization by making real assets more attractive.

There are, therefore, conceivably many endogenous as well as exogenous factors that might put limits on the role of financial intermediaries viz-a-viz real development. "Financial institutions, being poorly equipped with expertise and necessary information, together with distortions elsewhere in the economic system, may not promote economic development, even when government policy towards them is liberal" (Diaz-Alejandro, 1985). These institutional factors, together with the obvious shortcomings of the causality tests, make it difficult to draw any sound conclusion concerning the relationship between financial and real development.

The impact of monetary and financial policies on financial development, and the effect of these and other endogenous constraints on the role of the latter in economic development will be examined in detail in the following chapter.

1.7 Purpose and Scope of the Study:

It is our contention in this study that in LDCs in general, and in Sudan in particular, there is a pressing

need, as well as a room, for real capital formation by means of more efficient mobilization and application of domestic resources. While considering the adequacy, or otherwise inadequacy, of public finance, the main objective of the study is to examine and assess the role of financial and capital institutions in economic transformation in Sudan, in terms of the saving-investment process, and provision of equity or equity-related services. The thesis contends that the present financial system is inept to play a leading role in economic development and that direction and control by monetary authorities may not be the prime detriment to its well-functioning. Justifications for this contention require an analysis of monetary and credit policies, their impact on the behaviour of financial intermediaries and how the latter reacted when these policies were relaxed in the late 1970s and the early 1980s.

It has been claimed that Islamic banks, which do not deal in predetermined rates of interest and which provide primarily equity-based finance, are bound to be more growth-promoting than conventional banking institutions. Banks of the Islamic type have been in operation in Sudan since 1978, and the entire financial system was required[19] in 1984 to conform to Islamic modes of finance. It is our hypothesis in this context that the basic economic characteristics of an Islamic financial system accord with those of a securities market. But, while the incorporation of Islamic financial and capital institutions may swell the development of a primary securities market, albeit in a crude sense, the presence of a secondary securities market is a requisite for the advantages envisaged in Islamic finance to be fully realized. It is, therefore, also our objective to evaluate in particular the practice of Islamic banks in Sudan, and to focus on their implications on both savings and investment, and on wider monetary aspects of development. A good deal of attention

will also be given to the operations of non-bank financial intermediaries and how they responded to the introduction of Islamic legislation.

Finally, in addition to arguing that the transformation of the conventional financial system into an Islamic one should be accompanied by an equal commitment to devise a market for securities, we also advance the case for this market taking into account limitations of debt-finance by commercial banks.

The scope of any economic study is necessarily limited since economics is a multidisciplinary subject. Thus, the scope of our study, which is concerned with the role of financial and capital markets in the economic development of Sudan in particular, is restricted to;

1. A discussion and assessment of the general literature on, and recent models of, finance and development in LDCs in particular.
2. A study of the economic structure, potential, performance, and development strategies in Sudan, and the adequacy of private and public savings.
3. An examination of financial and capital institutions and instruments; their structure, regulations, relevance and contribution to the financing of the development priorities of the country.
4. An evaluation of the Islamic theory of finance, and the developmental content of Islamic banking as applied in Sudan.
5. A quantitative investigation of the relationship between the financial and expenditure sectors in a macroeconometric model of the Sudanese economy, and an analysis of the policy implications of the nature of this relationship.
6. Suggestions for improvement, especially in the financial and capital system, as a step towards future economic progress.

The study covers the period 1960-88, but emphasis will be placed on the sub-period 1978-88, which witnessed the

liberalization of the Sudanese economy as well as the socio-economic and legislative changes mentioned earlier.

1.8 Methodology and Structure of the Thesis:

The analysis in this study is, largely, based on data provided by official and institutional sources. But, to gain an in depth knowledge of the issues considered, use though limited, will be made of information obtained through interviews conducted with a number of senior Bankers in Sudan, as well as case studies covering a sample of commercial banks. The case studies relied on an examination of individual bank's accounts, policies and strategies, whereas the main objective of the interviews was to highlight certain institutional aspects of finance. Statistical or econometric estimations, where appropriate, are used to study relationships amongst the variables considered, and a structural model of finance and development will be constructed and estimated. The complete model will then be simulated and major policy options analysed.

The study will be divided into 7 chapters, excluding the present one. The contents of these chapters are briefly described below.

Chapter 2 examines and assesses models of finance and development, that deal, particularly, with monetary and financial institutions in LDCs and how they relate to real economic activity.

Chapter 3 is intended to serve as a background against which the empirical work in subsequent chapters is carried out. It deals with the economic structure, economic potential and performance of Sudan. Particular attention is given to the magnitude and determinants of both public and private consumption, saving, and investment. This chapter also examines the limitations of public finance, the inadequacy of domestic sources of finance in general and their implication

for development planning and performance.

Chapter 4 discusses the financial structure, the operations of the banking sector in general, and related aspects of monetary and credit policy.

Chapter 5 examines and evaluates the theory of finance in an Islamic context. This chapter also provides a comparative assessment of the nature, instruments and operations of Islamic banks in Sudan.

Chapter 6 evaluates the performance of non-bank financial intermediaries in general, and the Islamic investment and holding companies in specific. Then a case for a securities market in Sudan is developed, while the Sudanese experience in this respect is investigated.

Chapter 7 constructs an empirical model to investigate quantitatively the behaviour of key monetary variables and their interaction with real economic variables. The full model is, then, simulated, and the implications of various policy exercises analysed.

Finally, chapter 8 gives a summary of the major findings of the previous chapters, discusses their implications, and provides suggestions concerning the direction of future monetary and credit policy in the light of Sudan's development prospects. It also gives suggestion for future research in this area.

Notes:

1. For a survey of foreign aid and economic development in LDCs see Killick, T. (1984).
2. Tax systems may fail to efficiently mobilize surpluses, let alone encouraging increased voluntary savings, while the already high inflation rates in LDCs make inflationary finance a less desired option (Baker and Falero (1971).
3. Chandavarkar (1983), P.228
4. Neale, W. quoted by Chandavarkar (Ibid)
5. Gurley and Shaw (1960) described such an economy as "rudimentary"
6. See chapter 6 for a discussion of rural money markets in Sudan.
7. For further details on the structure of financial markets in LDCs see Ghatak (1983) and Kitchen (1986)
8. Securities markets are examined in detail in chapter 6.

9. See note 6 above.
10. About 50% of credit facilities in Sudan in 1986 were limited to the capital Khartoum (Bank of Sudan Annual Report, 1986,P.57)
11. With improved return on savings the target saver is encouraged to save relatively less, and to consume more...at the limit he will....consume the full increase in his income resulting from opportunities of financial intermediation (Patrick, 1966, P.48)
12. See Goldsmith (1969), PP.391-2.
13. See Karl Erich Born (1984).
14. The issue of measurement is as controversial as the role of financial institutions, and, as Drake (1980) illustrates, the choice of a particular measure may well depend on the purpose of the study.
15. e.g. Gurley and Shaw (1955, and 1960), Porter (1966), Townsend(1983), and Fry (1988)
16. Harvey, A. (1990) illustrates and compares these tests.
17. Granger (1969), P.429.
18. These measures are: Currency plus demand deposits (M_1); M_1 plus quasi-money(M_2), total domestic credit, total private credit, and total domestic finance, which includes M_2, bonds and capital accounts.
19. Banks' Islamization Act (1984), Bank of Sudan, Khartoum.

CHAPTER 2

A REVIEW AND CRITICAL ASSESSMENT OF FINANCIAL DEVELOPMENT MODELS FOR LDCs: LIBERALIZATION VERSUS REGULATION

2.1 Introduction:

The development of financial intermediaries and instruments in developing countries is not only an important target of monetary policy, but also a crucial condition for its effectiveness, as well as a means of dealing with the fundamental problems of growth and development, as the recent literature suggests. And financial development is said to be impeded by the prevalence of interventionism, and best promoted via the free interplay of market forces.

The major concern of this chapter is to examine the theoretical underpinning of the impact of monetary and financial policy on the development of financial and capital markets, and via that on economic growth. Thus, in discussing available policy instruments, real economic growth may be regarded as the ultimate policy target, and financial development as an intermediate target. The discussion is based on a review and critical assessment of recent models of financial development for LDCs, which provide a case for financial liberalization as against financial regulation.

The scheme of the rest of the chapter is as follows. Section (2.2) considers the nature of monetary policy in general, and interest rate policy in particular, in LDCS. In sections (2.3) and (2.4) models of financial development, namely Mckinnon and Shaw models and their extensions, are examined. Alternative models are dealt with in section (2.5), whereas section (2.6) provides a critical assessment of the financial development models. Finally, section (2.7) gives a summary and concluding remarks.

2.2 The Nature of Monetary and Financial Policy in LDCs:

It was implied in the previous chapter that a substantial proportion of income and consumption in LDCs originates from non-monetary transactions. Though, this may not be true across LDCs, the monetization ratio in these countries in general is considerably low relative to developed countries. Moreover, developing countries have the common feature of financial dualism. The implication of these aspects to monetary policy are that the relevant concept of income is, perhaps, the monetized proportion of it, and not national income, and that the domain of monetary policy is rather limited. For example, changes in money supply may affect interest rates, but only in organized money markets.

Meanwhile, the array of instruments of monetary policy available to the authorities is also narrow. In well-organized money and capital markets these instruments would include: open market operations, interest rates, required reserve ratios, the discount rate and directives. Open market operations are rarely effective in LDCs owing to lack of sufficient suitable securities for the central bank to deal in and absence of depth in secondary financial markets. Among the remaining instruments, interest rates[1] and credit controls and directives appear to be the most important and commonly used instruments.

The literature on finance and development, however, focuses mainly on the policy of interest rate fixing and regard it to have the most pervasive effect on the growth of financial intermediation, savings and capital accumulation. Fixed nominal rates of interest, coupled with normally high rates of inflation in LDCs, render real rates of interest negative in most cases (Ayre, 1983). The economic impact of such policy may be particularly significant when associated with distortions elsewhere in the economy. In fact, almost all

markets in LDCs are subject to government intervention, and rarely left to the free interplay of market forces. Before examining the implications of government intervention in the financial market, it may be necessary to understand the general economic reasons behind interventionism. The reasons contemplated in the literature(2) may be summarized in the following:

1. Interventionism may result as a response to an initial disturbance such as unfavourable changes in the terms of international trade. This may generate shortages in savings and foreign exchanges, raise inflation and consequently induce the government to manipulate such variables as the rate of exchange.
2. Intervention may simply be provoked by mistrust of the ability of market forces to allocate resources among alternative uses in the most desirable way from a social and economic point of view.
3. Historically, interventionism may have been in many LDCs a means of ending political and economic colonialism. The economies of most colonies were structurally linked to those of the centres, and key economic activities were dominated by foreigners. Therefore, national governments tended to exercise control over domestic markets in the hope of restructuring their economies and achieving post colonial economic independence.
4. Interventionist policies may be influenced by the interest of particular groups; for instance, those who can benefit from import licenses, and cheap credits.
5. Finally, as Shaw (1973) suggests, economic myopia may be partly to blame. For example, it might be overlooked that low nominal rates of interest, which lower the cost of investment, may also make savings less attractive.

By far the first two reasons seem to be the most convincing and powerful in explaining the presence and prevalence of

interventionism. In almost all developing countries there are plans for social and economic change and development. As markets are generally poorly organized, relative prices are, for projection purpose, usually set by the authorities. Since disturbances in one market tend to transmit themselves to others, the authorities may have to continuously intervene in markets in order to control the implied changes, and for the original plan to be carried out. Furthermore, in view of acute shortages of, especially financial resources, the authorities ought to identify priority sectors, and accordingly manipulate funds for those that rank high in their plans.

Thus, interventionist strategy may be self-generating. But, if the government cannot identify the correct relative prices, and as a consequence, fail to efficiently coordinate economic activities, this strategy will also be self-defeating. The outcome of all this will be a fragmented economic system. "Firms and households will be so isolated that they face different effective prices for land, labour, capital and produced commodities, and do not have access to the same technology" (Mckinnon, 1973, P.5). Therefore, modern and old technologies will coexist, with substantially different degrees of efficiency, entailing wide variations in investment productivity across sectors.

The Mckinnon-Shaw models of financial development and their extensions to be discussed below maintain that fixing interest rates below their market clearing levels leads to financial repression. This in turn reduces the real size of the financial sector relative to other sectors, with adverse effects on the process of economic development.

2.3 The Mckinnon-Shaw Models of Financial Development:

These models stress the role of financial intermediation in the process of capital accumulation and growth, and challenge

the standard economic hypothesis of a negative correlation between interest rate and investment in the context of LDCs. High rates of interest relative to the marginal efficiency of investment in existing technology, would release funds from low yield investments to investment in improved technology and increased scale in enterprises. In addition to effecting increased financialization of savings, it has been argued that high rates of interest would raise net savings. For example, Mckinnon (1973) stresses that:

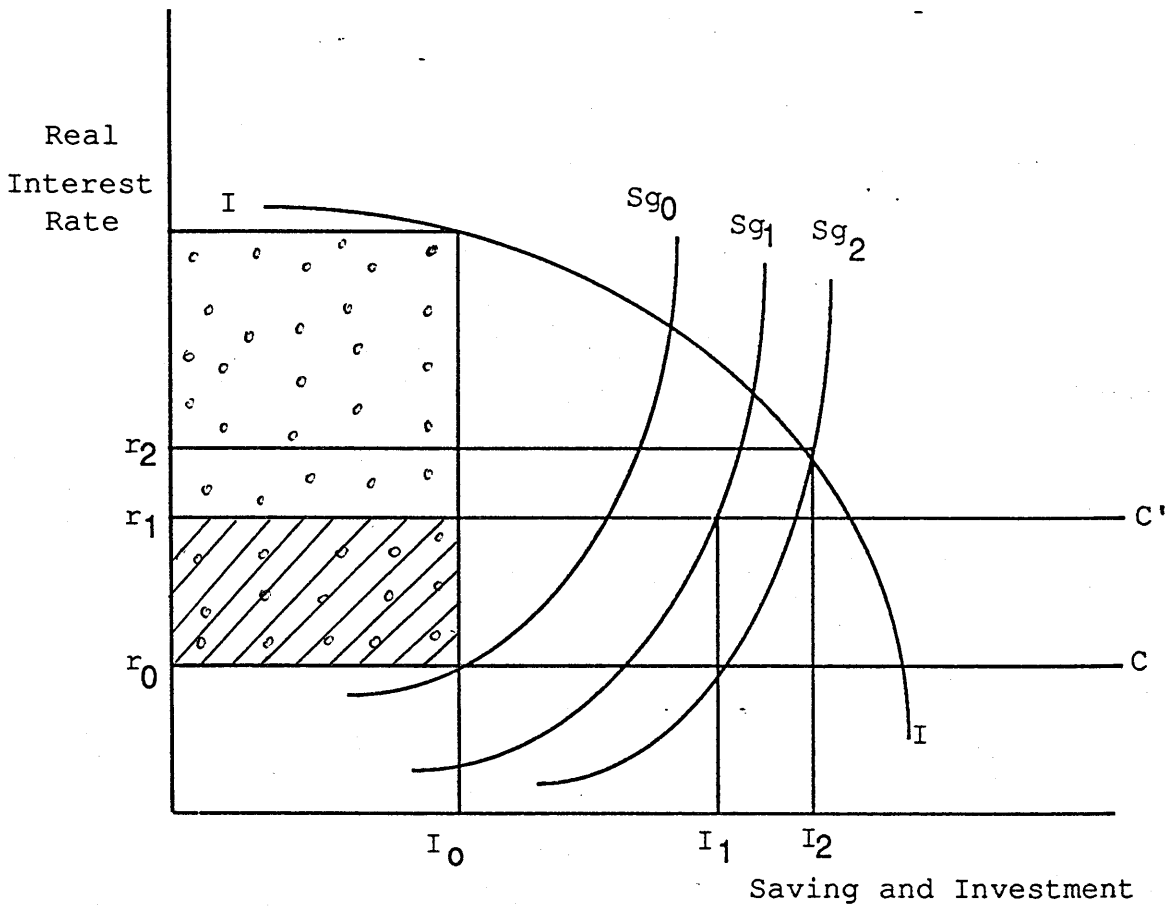
> "Where loans are plentiful high rates of interest for both lenders and borrowers introduce the dynamism that one wants in development, calling forth new net savings, and diverting investment from inferior uses so as to encourage technical improvement" (P.15).

This argument clearly assumes that aggregate saving in LDCs is interest-elastic, and overlooks both the theoretical and empirical ambiguities surrounding the relationship between the two, as we have pointed out in chapter 1. Likewise, Shaw (1973) has argued that financial liberalization, i.e. allowing interest rates to be determined by market forces, is a condition for financial growth, as it helps expanding organized capital markets, reduces fragmentation in the economy and boosts output via capital accumulation.

The underlying assumption of the Mckinnon-Shaw models is that capital accumulation in developing countries is restricted by the availability of investible funds; investment opportunities abound. Therefore, high real rates of interest, which stimulate savings, will also raise the rate of investment(3). The basic common elements of these models may be illustrated diagrammatically as in figure (2.1) below.

Figure (2.1)

Saving and Investment Under a Financial Constraint



In this figure, C is the financial constraint in the economy, taken as an administratively-determined nominal rate of interest, which holds the real rate of interest, r, below its equilibrium level. Actual investment is limited to I_0, the amount of savings, S_{g_0}, forthcoming at the real rate of interest, r_0. The effect of financial liberalization and deepening will show up, first, in a more relaxed financial restraint, say C'. As savings, thus, increase, the volume of investment will also rise from I_0 to I_1. In addition to this, investment productivity would improve. First, because high rates of interest would stimulate demand for financial assets, and hence, the financial sector expands. Second,

removal of interest rate ceilings may make financial intermediaries less risk-averse, and in turn finance investments that promise higher rates of return. Accordingly, low yielding investments, indicated by the shadowed area, that were financed before will be rationed out. Third, since financial liberalization, in the form of higher deposit and lending rates, raises the cost of borrowing, entrepreneurs are likely to switch to less capital-intensive production techniques. Such techniques may not only raise the average productivity of capital, but also represent the appropriate technique, provided the relative availability and cost of labour and capital in LDCs. Fourth, letting interest rates be determined by the market mechanism would reduce or even eliminate the costs involved in credit rationing arrangements, and thereby enhance the efficiency of the economy as a whole.

Though both the Mckinnon and Shaw models advocate the policy of interest rate liberalization, they differ considerably in their attitude towards the transmission mechanism via which positive real rates of interest may influence savings, investment and growth. Mckinnon's model makes the following major assumptions. First, there is no or limited access to external finance for the majority of investors in the fragmented economy. Second, indivisibilities in investment are of considerable importance, that is, investment projects are lumpier. Therefore, investors[4] in this economy may find it easier to gather funds in monetary assets until they have enough to invest in real capital assets. Thus, money and capital are complementary in the sense that the former serves as a conduit for accumulation of the latter. This implies that aggregate demand for money will be greater the larger the proportion of investment in total expenditure, i.e. if the desired rate of real capital formation rises, at a given income level, then the average

ratio of real cash balances will also rise. This relationship is characterized in the following money demand function(5), F, which incorporates the ratio of real investment, I, to real income, Y:

2.1 $M/P = F(Y, I/Y, d-\Pi)$

Where M is the money stock, broadly defined to include M_1 plus time and saving deposits, P is the consumer price level, d is the nominal deposit rate of interest, and Π is the expected inflation rate. All the partial derivatives are positive, with $I/Y>0$ reflecting the complementarity hypothesis. This and the positive coefficient for the real rate of interest need further explanation. The complementarity argument is in contrast with the established portfolio approach and prevailing monetary theory in general. For example, as in Patinkin and Levhari (1967), real money balances are considered as a form of wealth that competes with other assets (real assets) in private portfolios. But, for this to hold there need to be perfect markets for both financial and real assets so that interest rate changes, for instance, may be transmitted. In developing economies where financial markets are poorly organized and related to expenditure sectors, interest rate policy affects investment primarily via changes in savings in the form of financial assets. Thus, the real rate of interest has a positive coefficient with M/P and imposes no limit on investment.

Shaw's model, on the other hand, stresses external or debt finance, rather than self-finance, possibilities as the binding constraint on real capital formation. But, he also rejects as inadequate the traditional monetary theory in favour of what he calls the debt-intermediation view. In this view, emphasis is placed on the development of financial intermediaries to efficiently fulfill their functions, and thereby influence real economic activity. Finance, here, is

optimal or deep when interest rates are free to find their equilibrium levels. And the interest rate mechanism is also optimal because, as a reward to savers it mobilizes resources, and as a rationing device it leads to a more productive allocation of these resources. Shaw's analysis produces a demand for real cash balances function, which can be represented as follows:

2.2 $M/P = F(Y, V, d-\Pi)$

Where V is a vector of real opportunity costs of holding money. It includes, among others, the consumer rate of time preference. Other variables remain the same as defined in equation (2.1) above. Both real income and the real deposit rate are expected to be positively related to M/P, while the coefficient of V would carry a negative sign.

Due to their important policy implications, and non-orthodox approach, the above models provoked substantial work on monetary theory as it applies to LDCs. We discuss, below, extensions to these models before considering alternative models and providing a critical assessment of them in the following sections.

2.4 Extensions to Mckinnon-Shaw Models:

We consider, here, the basic financial models for LDCs in the repressionist tradition, which have been constructed by a number of writers(6).

Galbis (1977) analyses a two sector economy: roughly, modern and traditional. Because of relatively advanced technology, investment in the modern sector is assumed to be more productive. But, both sectors enjoy constant return to scale techniques of production. It is further assumed that investors in the traditional sector are confined enirely to self-finance, and can invest either in low-yield projects, bank deposits or both depending on returns on deposits and real investment. Since savings can either be held in the form

of bank deposits or invested, the volume of investment in this sector will be smaller than that of savings. In contrast, investors in the modern sector are assumed to have access to bank credit, besides self-finance. Moreover, investment opportunities in this sector are plentiful, and their real rates of return can be exceedingly high. These rates are unlikely to be substantially reduced, except in the very long-run when the economy becomes more mature.

The effects of financial repression on development can now be analysed in terms of the above framework. A rise in the deposits rate of interest will raise both the volume and productivity of investment, as the demand for financial assets by the traditional sector rises, and credit and investment in the modern sector increase. The intermediation process, which may thus enhance the average efficiency of intersectoral investment can also raise intrasectoral investment productivity, through appropriate project selection.

Kapur's (1983) and Mathieson's (1980) models allow financial liberalization to influence only the volume of investment through bank financing of working capital. It is assumed that there is unused fixed capital in the developing economy, and that working capital availability is the binding constraint on output growth. Therefore, increased availability of the latter which allows the utilization of the former will promote output. But, Fry's (1988) model elaborates the basic liberalization argument and permits high interest rates to influence economic growth via both quantitative and qualitative changes in savings and investment. Additionally, he sees legal reserves requirements to be a constraint on bank lending, the solution to which lies in the authorities paying competitive interest rates on them. This is justified simply because it is at the central bank's disposal to use required reserves of commercial banks.

The overall conclusion of financial development models is that the growth-maximizing rate of interest is the competitive free market rate. The basic assumptions of these models are, however, open to question. The assumption that investment opportunities are plentiful implicitly implies that there exists an able class of entrepreneurs in LDCs, or that financial institutions would enhance the growth of entrepreneurship, irrespective of their structure and nature of operations. Moreover, these models seem to underrate the importance of such structural factors as financial dualism in the course of financial and real development. We examine, first, how financial dualism may weaken the liberalization argument in the context of the alternative, neo-structuralist models.

2.5 Alternative Models: The Neo-Structuralist Hypothesis:

Alternative models[7] of finance and development underline the role of structural factors such as financial dualism in the economic development of LDCs. In particular, they attach greater importance to curb markets, which, they maintain, should be an integral part of any monetary model of a less developed country. The neo-structuralists cast doubt on the repressionist view that high deposit rates of interest may promote savings and investment. The repressionist argument hinges crucially on the assumption that portfolio adjustments lead to shifts into bank deposits at the expense of assets[8] providing less intermediation than those of the banking system. The neo-structuralists refute this argument on the basis of links between the organized and curb money markets on the one hand, and between the two markets and the business sector on the other. It has been assumed that funds flow freely between the curb market and the banking system, and that firms rely on credit from both of them. Moreover, the

unorganized money market, in contrast to the organized one, is supposed to be competitive because of absence of reserve requirements, and interest rate and credit restrictions. It follows that the curb market's assets may provide more intermediation than those of the banking sector. As a result, an increase in the deposit rate necessary to shift resources away from the curb market would be contractionary in the short-run because it: (1) raises the lending rate in the curb market; (2) leads to a net reduction in overall credits, since the organized money market is subject to legal reserve requirements; and (3) from (1) and (2) it follows that the overall cost of working capital increases, and output decreases via reduced investment.

Contrasting the repressionist and new structuralist views, it appears that interest rate effects depend on the assumptions made about the relative efficiency of the organized and unorganized money markets. However, although appealing, the neo-structuralist argument is unconvincing. Above all the importance attached to the curb market is not amenable to empirical verification, because it is extremely difficult to gather reliable information on its operations. Apart from van Wijnbergen (1982) empirical estimates for South Korea[9], there seems to be no econometric application of these models. Aside from that, the effect of reserve requirements on the availability of bank credit can be, and usually is, minimized by channelling these reserves to specialized public finance agencies for lending that might not be undertaken by commercial banks. Moreover, curb markets have been found in most cases to be fragmented, and operating independently from the banking system. This is particularly true in Africa, where indigenous money markets are used largely to finance household consumption and very small scale family farms. Curb markets, being small in size, generally lack specialization and division of labour. Therefore, it is

not clear how curb markets can be more efficient than banks in mobilizing and allocating resources. With regard to the link between the two segments of the money market, Ghatak's (1983) study of several LDCs concludes that "the evidence suggests that the links between the organized and unorganized financial sectors are rather weak in most LDCs, that the size of the latter is declining very slowly, and that the flow of funds between the two is not great"(P.46).

In conclusion, the neo-structuralist view does not only provide no strong case to counter the repressionist hypothesis, but it also cannot assist in determining policy actions that are consistent with the special characteristics of developing countries.

2.6 An Assessment of Financial Development Models:

The literature advocating financial liberalization and development as a step towards real growth, as seen above, has no strong theoretical foundations, the general argument for free markets aside. Therefore, in assessing this literature, use should also be made of existing empirical evidence.

For a variety of reasons, some of which have already been highlighted in section (2.2) above, most LDCs governments have not responded to the call for financial liberalization. Accordingly, fixed interest rates, or financial repression, policy continued. Nevertheless, during the 1970s and early 1980s, different forms of financial reform were implemented in several developing countries, notably Argentina, Chile, El-Salvador, Mexico, and South Korea. Financial liberation policy took two forms[10]: (1) improved management of intervention policy, and supporting regulations aiming at guiding the market towards a more competitive behaviour; and (2) full deregulation of financial markets, which permits financial variables, particularly interest rates, to find their equilibrium levels.

In short, attempts at financial liberalization in LDCs, particularly through deregulation, have been unsuccessful[11]. A variety of difficulties, which led in some cases to financial crises, were encountered. According to Diaz-Alejandro (1985), the results of financial liberation in Argentina, Chile, and Uruguay were a boom in financial savings and intermediation, but with no sign of an increase in total domestic savings, or of domestic investment either increasing or becoming more efficient. In summing up the overall performance of financial liberation programmes in the South American experiment after the lapse of six years or so, Diaz-Alejandro wrote:

> "The combination of pre-announced or fixed nominal exchange rates, relatively free capital movements, and domestic and external financial systems characterized by moral hazard[12]...set the stage not only for significant microeconomic misallocation of credit, but also for macroeconomic instability, including explosive growth of foreign debt, most of which incurred by private Chilean banks, followed by abrupt cessation of capital flows" (P.15).

There is now a broad consensus, even among those who previously advocated it that financial sector liberation may not be more fruitful than repression. For example, Galbis, who argued strongly for the benefits from financial liberalization in 1977, has come to argue for what he terms "market-creating" intervention in 1986. In his words:

> "..a prolonged disequilibrium state such as the prevalence of negative real interest rates is better explained as a product of market imperfections than of the authorities policy "mistakes" and policy "mistakes" themselves can be explained as part of these market imperfections" (P.138).

The apparent failure of financial liberalization programmes may be explained in terms of three factors that do not relate to a specific experience, but to the fundamental grounds of the models of financial development. Firstly, there are likely to be strong endogenous constraints in the financial sector, such as imperfect information, which may lead to inefficient credit allocation, even under free interest rate regimes. Secondly, the presence of an adverse macroeconomic environment, and in particular, lack of harmony among exchange rate, interest rate, wage and fiscal policies(13) during the reform period. Finally, the existence of uncompetitive banking systems or oligopolistic financial sector behaviour.

All these issues relate, in one way or another, to the interplay of market forces. The question then is, can financial markets in LDCs efficiently allocate resources when they are free from exogenous, legal or institutional, constraints?.

Stiglitz and Weiss (1981 and 1983) suggest that credit markets(14) in which interest rates are set according to borrowers' characteristics, are subject to a possibly binding endogenous constraint. This constraint, which arises as a result of, especially information, costs of differentiating between the risk characteristics of various borrowers, can be modelled to explain the existence of credit rationing in competitive markets. In their analysis, even under conditions of excess demand for loans at a given rate of interest, liberal credit institutions tend to ration credits and not to raise the rate of interest. This happens because it is possible that, provided certain groups of observatinally distinguishable borrowers, information imperfection results in those whose projects promise higher returns being shut out of the loan market; risk and return being positively correlated. Accordingly, the allocative efficiency of the

market would be impaired as : (1) banks would find it more profitable to lend to those who are not able to borrow at high lending rates, because they are safe borrowers (the adverse selection effect); and (2) with high rates of interest, and if they have the choice of projects, borrowers would prefer projects, with higher probability of default (the incentive effect).

As mentioned above, a riskier project would yield higher returns if successful, and vice versa. If the project is successful the borrower gets the entire return over the cost of the loan, while the bank simply gets the principal plus the amount of the predetermined rate of interest, irrespective of how high the actual investment return is. On the other hand, if the project fails, the borrower loses the specific amount of his collateral, whereas the bank bears the entire loss less the borrower's collateral. Thus, the borrower's expected return, as opposed to that of the bank, may be an increasing function of the riskiness of his project, and higher loan rates may discourage the safe borrower whom banks prefer. The adverse selection and incentive effects may induce banks to keep the lending, and consequently the deposit, rate below its market-clearing level; the lending rate will be determined at the level at which banks' expected returns reach a maximum.

The economic dimension of such behaviour is that banks may tend to concentrate their credits on a small number of firms that have established relations with them, and meanwhile ration-out new ones, which might be innovative, and highly productive. The dynamic effect of inflexibilities in bank lending on economic growth will be serious since, as Cho (1986) notes, it can diminish the opportunities to innovate and make adjustment in the industrial structure difficult in developing economies where comparative advantages shift from one sector to another. Moreover, financial intermediaries

being inhibited from having adequate information on various borrowers and projects may not be in the position to enhance entrepreneurial development via non-credit services.

It has been suggested[15] that the existence of equity markets will help avoid such shortcomings, and boost capital efficiency. Assuming that risk-neutral lenders and potential shareholders have the same information on firms as banks do, then the riskier category of entrepreneurs will be able to obtain finance for two reasons. Firstly, equity finance, in contrast to debt finance, is free from the adverse selection and incentive effects. Secondly, expected returns to equity investors will exactly match those of the project itself, i.e. there would be no clash between lenders' and borrowers' interests. The argument for equity markets gains added importance, because, in their absence, equity capital has to be generated through retained business earnings. And as Snowden (1987) notes, debt-equity ratios are typically high in LDCs, indicating that increases in interest rates will lower business profits.

Hence, it seems that even if financial liberation raises savings, it may not engineer real growth and that equity markets[16] might be of critical importance in the process of economic development in LDCs.

Another possibly significant impediment to a successful financial reform in LDCs lies in the structure of the financial sector and its links with the corporate sector. It has been observed[17] in many LDCs that there exist multi-company, or group of, firms, that under common entrepreneurial control, operate in both the corporate and the financial sectors. Such setting results in what is generally known as bank-holding company structure, and may arise as a byproduct of the expansion of the group: "large groups have also established banks and other financial intermediaries to tap capital from outside the immediate

members of the group (Leff, 1976)". The bank holding company structure is likely to unduly restrict the flow of credit to firms within the group, especially when banks are not regulated. As Diaz-Alejandro (ibid) remarks the close association between financial institutions and non-financial corporations ...can indeed lead to distortions in the allocation of credit, as shown by the Argentine and Chilean experiences...and was responsible for the high use of debt by private firms.

The possible adverse consequences of bank-holding company structures on credit allocation and financial sector liberalization are further exacerbated by the prevalence of a high degree of market concentration in a few financial firms in some LDCs. This concentration results normally from historical factors, besides economies of scale and horizontal expansion of financial firms. It is usually the case that, in the absence of regulations, financial institutions exhibit a tendency towards horizontal consolidation by mergers, takeovers, and other forms of participation by some financial companies in other companies. The outcome of a bank-holding company structure and a high degree of concentration would be an oligopolistic financial sector behaviour. This, in turn, can result in one of two undesirable solutions: one inefficient, collusion; and the other unstable, oligopolistic pricing war.

Having achieved a degree of power in financial markets, bank-holding companies may tend to influence banks into a collusion solution, which minimizes lending, and in effect deposit, rates. This may occur in spite of the fact that banks alone, under oligopolistic conditions, would prefer widening the interest rate spread by increasing lending rates and lowering deposit rates in order to maximize profits. The collusion solution, however, may be preferred by both corporate and financial firms, members of the group. The main

reason being that since banks are generally subject to closer scrutiny by monetary authorities, it may be in the interest of the group to receive profits from financial operations vis-a-vis non-financial activities[18]. To do so banks would provide subsidized credits to corporate firms, members of the group, and, therefore, keep interest rates below their market-clearing levels. On the empirical importance of bank-holding company structures, Galbis (1986) points out that in few countries collusion has been enforced by direct understanding among financial and corporate firms, but in many countries interest rates have been fixed by understanding among financial institutions themselves, despite the absence of controls.

Oligopolistic pricing war occurs when some institutions try to gain more market share at the expense of others. Even under conditions of low and stable inflation, Galbis (ibid) finds financial deregulation and unrestrained competition among few financial firms to result in abnormally high rates of interest, declined business profits and accumulation of bad debts by banks. However, it should be stressed, at this junction, that a close relation between financial and corporate enterprises is not necessarily undesirable. As we mentioned previously in the case of Germany such association was behind economic boom, rapid expansion of industry and entrepreneurial skills. What is important in the context of LDCs, where market structures are less competitive, is that financial liberalization may further deter competition through excessive concentration and bank-holding company structures.

The discussion, again, suggests that financial sector liberation is less likely to succeed in the absence of regulations. This leads us to a further consideration of financial markets and their behaviour under different policy regimes, i.e. free markets as opposed to regulated markets.

The recent financial history of most developed countries seems to suggest that government intervention and regulation of financial markets is inevitable. "No industrial country has come close to the laissez-faire vision at least since the 1930s. The government control over cash has been maintained, while banks have been regulated and subjected to fractional reserve requirements. In the United States, an explicit federal deposit insurance was introduced during the 1930s, and maintained since then...like any other insurance scheme this scheme is vulnerable to moral hazard, i.e. it induces depositors to believe that one bank is as good as another, and leads bank managers to undertake riskier loans. To avoid such insurance induced risk-taking supervision over banks portfolio accompanied deposit insurance. Indeed, the federal reserve holds impressive discretionary powers regarding the lending policies of commercial banks, and over their liquidation or merger(19)". This clearly signifies that banks need to be regulated not necessarily for manipulation of their credits, but also for their own safety, that is, for them to avoid destructive behaviour which may undermine public confidence. It is common practice, almost in all countries, that the authorities control such financial variables as interest rates or exchange rates. Whether the objective of such policy is to influence banks' behaviour or, as often is the case, for stabilization purposes it necessitates government intervention. And if this holds in the context of developed countries, there is a stronger case for financial regulation in LDCs. The activities of profit-minded financial intermediaries, which may endanger their own survival, is less likely to adequately account for employment creation, food security, and social and economic equity. These aspects are of utmost importance in LDCs, though they may be less attractive on profitability basis.

Accepting this externality argument, together with

widespread market imperfections, financial liberation may not be as fruitful as Mckinnon and Shaw and others have suggested. There is, however, no dispute that real interest rates should not be kept negative, but our discussion above suggests that this should be ascertained by realistic monetary policy, rather than the free interplay of market forces.

To close this section, some additional deficiencies in financial development models may be worth noting. These models place major emphasis on the role of the interest rate and ignore other determinants of savings, income aside. Moreover, in assuming that good quality investments opportunities exist in LDCs, and only finance (saving) is lacking, these models implicitly assume that entrepreneurial talents are plentiful in these countries. But, our discussion in chapter 1 indicated that these talents are scarce in LDCs, and it is one of the envisaged functions of finacial institutions to promote them.

2.7 Summary and Conclusions:

The main aim of this chapter was to review and critically assess the literature on financial development in LDCs, with a view of how the financial system can be optimally developed to play a prominent role in the economic progress of these countries. In the models of financial development for LDCs, it is said that this can be accomplished by letting financial markets operate freely. In particular, market-determined rates of interest are regarded as a means of achieving financial development, which would, through efficient resource mobilization and application, enhance the rate of economic growth.

But, the financial liberalization or repression strategy is limited in many ways. It explains only private investment and only that part of it financed through domestic credit.

Government investment, which is mainly financed via taxation and foreign aid, forms a significant proportion of total investment in LDCs. And in the absence of well-functioning equity markets, interest rate changes may have little impact on public investments, meanwhile, as Kitchen (1986) notes, foreign direct investment and private investment financed from abroad may be sensitive to interest rates in foreign, rather than domestic, markets. Again much of private investment in LDCs may be financed through retained earnings or investors own resources. More important, due to significant market imperfections, financial liberation may not be growth-promoting. Even if financial markets are free, credit-rationing may still take place on non-price basis, discouraging new and more productive investments. There is also no guarantee that substantial maturity transformation would occur; banks might continue to lend short excessively more than lending long. Subsequently, an increase in deposits in response to higher interest rates would not have the desired effects on capital accumulation and growth. Moreover, the literature on financial liberalization fails to explain how it can enhance entrepreneurial development in the modern sector, let alone the traditional one. (The development of entrepreneurship may not be invariant to the structure of financial and capital markets.) Similarly, the literature is yet to reconcile potential conflicts between the interests of purely profit-minded institutions, and the social and economic priorities of the nation, provided the scarcity of financial resources in LDCs. This, together with the fact that banks normally confine themselves to the modern sectors only, may continue to justify government inspired concessional credit schemes for small farmers, small scale indigenous enterprises, or certain underprivileged borrowers.

The conclusion of this chapter is that government regulation of financial markets is necessary, but it should

be well-guided in order not to inhibit the growth of financial, or any other, market. Unfortunately it is highly implausible to characterize a direction of financial policy applicable across all LDCs.

Notes:

1. In most developing countries principal rates of interest are determined by the authorities, with credit ceilings (Lanyi and Rusdu, 1983).
2. For further discussion of interventionism in general see Mckinnon (1973) and Shaw (1973).
3. This hypothesis was given added importance in that it has been subsequently adopted by international financial agencies such as the International Monetary Fund as a crucial, and in most cases a precondition, policy prescription for member countries seeking their financial support.
4. Mckinnon assumes that no important distinction can be made between savers (households) and investors (Firms).
5. See Mckinnon (Ibid), P.59.
6. Notably Galbis (1977, and 1979), Kapur (1976, and 1983), Mathieson (1980), and Fry (1988).
7. Formal models of this type have been developed by Van-Wijnbergen (1982, and 1983), and Lance Taylor (1983).
8. e.g. Gold and other similar inflation hedges.
9. Van Wijnbergen finds that an increase in the deposit rate produces greater substitution from curb market loans than from the currency component of money stock into time deposits.
10. Galbis (1982 and 1986) provides an extensive survey of financial reform programmes.
11. See Diaz-Alejandro (1985), and Galbis (1986).
12. Moral hazard, here, is perhaps induced by deposit insurance schemes.
13. Mckinnon and Shaw acknowledged the difficulties that may arise from lack of policy coordination, but still argue that financial market reform can stimulate economic progress, far from intensifying distortions originating in other markets.
14. The Stiglitz and Weiss analysis were conducted in terms of a developed economy such as that of USA, but they can more than equally apply to developing economies.
15. See Cho (1986), and Snowden (1987).
16. See chapter 6 for a discussion of the relevance of equity markets to LDCs.
17. Diaz-Alejandro (Ibid), Galbis (1986), and Snowden (Ibid).
18. According to Galbis (1986), higher bank profits may also result in higher wages, bonuses,...., and special advantages to shareholders, which may not be in the interest of the group.
19. Diaz-Alejandro (1985) provides further details, PP.4-5.

CHAPTER 3

ECONOMIC STRUCTURE, DEVELOPMENT PLANNING AND FINANCING STRATEGIES

3.1 Introduction:

The objective of this chapter is to examine the structure and performance of The Sudanese economy over the period 1970/71-1987/88. This period represents an era of both impressive economic growth and speedy retrogression. The chapter provides a brief account of the economic potential and structure of Sudan, and deals with the allocation of domestic resources among various competing uses. It also examines the Sudanese planning experience, with particular emphasis on the limitations inflicted on capital formation by inadequate financing. Furthermore, the chapter considers the role of the domestic financial system in financing public deficits, and the effect of this on different types of private expenditure. The chapter as a whole is intended to serve as a background against which the detailed analyses of the operations of the financial system, as they relate to economic development strategies, are carried out in subsequent chapters.

This chapter demonstrates that: development financing has relied excessively on foreign resources, the nature of which has adversely affected the structure of the economy; that the myopic behaviour on the part of the government has led to misallocation of the resources made available through the domestic financial system; and that the fiscal and monetary policies adopted by the government in pursuit of managing budgetary imbalances induced a private behaviour that is detrimental to growth.

The remainder of this chapter is structured as follows. Section (3.2) deals with the economic potential and economic

structure of Sudan. In section (3.3), the development performance of the economy over the period under review is assessed, in connection with the overall use of resources. Section (3.4) examines the composition and methods of financing public expenditures. In section (3.5), the planning experience of Sudan, particularly over the last two decades, and the financing strategy of planned expenditure on capital formation are analysed. Section (3.6) considers the size, trend and determinants of the resource gap. In addition, this section discusses the poor private savings performance vis-a-vis factors affecting the private consumption behaviour. Finally, section (3.7) gives some concluding remarks

3.2 Economic Potential and Economic Structure;

3.2.1 The Economic Potential of Sudan:

Sudan is the largest country in Africa and the ninth biggest in the world, with an area of about one million square miles. The country has enormous economic potential, particularly in the sphere of agriculture. This potential may be looked at in terms of arable land, water resources, minerals and livestock and human resources[1].

Out of the total area of the country of approximately 620 million acres, 88.6 million acres are classified as arable land, of which only 20% is currently under cultivation. It is also estimated that 40% of the total area of the country is suitable for grazing, but, only part of this area is utilized to support a relatively large livestock population[2]: 20.2 million cattle; 19.7 million sheep; 14.5 million goat; and 2.7 million camel. In addition to these, there is a possible huge population of wild animals, whose exact size is unknown.

According to specialists, the land potential of the country is supported by adequate water resources[3]. Water sources

include run-off water, surface water, and ground water flow. However, only 50% of the potential water is presently being used.

Sudan is relatively sparsely populated, with a total population of just over 23 million[4]. The population is estimated to be growing at the rate of 2.9 per cent annually. Of the total population, 69.1% live in rural areas, where the principal economic activities are agriculture and animal husbandry.

The country is believed to have a number of unknown minerals. Oil has been discovered in several parts of it in quantities that are supposed to be commercially feasible[5]. Developments in the area of oil explorations and utilization have been halted primarily by civil war in the South and South-west parts of the country where the major oil fields were discovered.

Thus, the country is well endowed with economic resources to support a relatively small population. But, these resources are yet to be optimally utilized, and Sudan remains to be one of the World's 25 poorest underdeveloped nations[6]. The underdeveloped state of the economy is patently revealed by its static structure.

3.2.2 Structure of the Sudanese Economy:

Table (3.1) reveals the relative shares of the main economic sectors in Sudan's Gross Domestic Product (GDP) in selected years. It is evident from this table that between 1969/70 and 1988/89, the structure of the economy has remained substantially unchanged. This structure is characterized by dominance of the agricultural sector, which comprises three distinct subsectors: the traditional rainfed agriculture; the mechanized subsector; and the irrigated subsector.

The traditional subsector, with an area of over 6.5 million

acres, produces most of food grain cereals, in addition to forestry fishing and livestock products. The mechanized subsector, with an area of about 4.8 million acres produces mainly sorghum and sesame by means of heavy mechanization, and is rainfed. The third subsector covering an area of 3.9 million acres supplies cotton, groundnut, sorghum, wheat and sugar. It is fully irrigated and relatively mechanized. Being the prime foreign exchanges earner, this subsector is the most privileged among the three in terms of supply of seeds, fertilizers, insecticide and other necessary inputs.

Table (3.1)

GDP By Economic Activity in Selected Years (%, at current prices)

Sector	1969/70	1974/75	1979/80	1984/85	1988/89[1]
Agriculture	37.6	38.5	32.0	29.3	41.1
Industry and Mining	9.5	9.1	6.9	9.0	6.9
Transport and Communications	7.3	6.2	8.5	8.6	10.3
Construction	3.5	3.8	3.9	5.8	5.2
Electricity and water	2.4	2.2	1.7	1.9	2.0
Commerce, Finance and Services	36.0	40.1	36.9	45.83	34.7
Total	100	100	100	100	100
GDP (1s mn)	701.5	1510.8	4122.8	14338	66026

Source: The Economic survey 1977/78, 1983/84 and 1988/89 editions, Ministry of finance.
Notes: (1) Provisional estimates.

By and large, the traditional subsector is the major one as far as domestic income and consumption are concerned. It provides jobs to over 50%[7] of the total population, and uses domestic inputs and technology to produce foodstuffs for the vast majority of both urban and rural population.

Nevertheless, the methods and conditions of production in this subsector have remained virtually out of the domain of government policy.

Though about 69% of the population are engaged mainly in agriculture, the contribution of agricultural output to GDP has been both unstable and proportionately low; it ranged between a minimum of 29.3% in 1984/85 and a maximum of 41.1% in 1988/89. These facts indicate the low productivity of the methods and techniques used, and reflect the wide changes in conditions of production in the traditional subsector, due to factors such as the amount and duration of rainfall. Moreover, variations in agricultural output are also attributable to the highly unstable prices of agricultural produce, both internationally, and domestically where they are manipulated by a few traders.

The underdeveloped feature of the economy is well depicted by the relative growth of the industrial sector. This sector, including the manufacturing subsector, which is supposed to be the most dynamic of all sectors in terms of effecting the process of growth, has maintained a share of GDP of less than 10%. Notwithstanding, the manufacturing subsector is predominantly a light consumer goods producer, with processed foods claiming more than half of its total output, and virtually no capital goods production[8]. Table (3.1) above also suggests another reason for slow growth and backwardness of the economy in terms of the underdeveloped state of infrastructure. For example, the share of the transport and communications sector in GDP increased from 7% in 1969/70 to just over 10% in 1988/89.

In contrast, the services sector encompassing commerce and finance displayed the most pronounced gain in GDP, which ranged between 36% and 45.8% over the period considered. Developments in this sector have been associated with a marked expansion in the financial network (see chapter 4). It

might be constructive to compare the economic structure of Sudan with that of some developing countries which are in comparable stages of economic development.

Table (3.2)

Economic Structure of Some Developing Countries in 1987

(% of GDP at current prices)

Country	Agriculture	Industry	Manufacturing	Services	Total[1]
Egypt	14.7	34.2	12.1	50.1	100
Ethiopia	43.5	18.0	12.6	38.5	100
Kenya	32.0	20.9	13.4	47.1	100
Morroco[2]	16.8	30.6	16.6	57.7	100
Nigeria	27.9	34.4	10.6	37.7	100
Ghana[2]	52.9	10.5	7.1	37.5	100

Source: World Bank, World Tables 1988/1989 edition.

Notes: (1) Total does not include manufacturing which is a subsector of industry. (2) GNP rather than GDP is used.

The data in table (3.2) above illustrate that the dominating position of agriculture is a feature of most of the countries considered. Apart from Ghana, both the industrial sector and the manufacturing subsector of Sudan have the lowest relative shares in GDP formation. The percentage share of the services sector in GDP is notably high in Egypt, Morroco, Kenya, and Sudan. However, this is not surprising as regards the first three countries, since each of them derives a considerable proportion of its national income from tourism(9), which is included in the services sector. As for Sudan, the income originating from the tourist subsector is negligible. However, the apparently disproportionate expansion of the services sector, be it productive or not, has been at the expense of the most productive sectors, especially industry. This suggests that,

in terms of structural transformation, the growth that has been achieved in Sudan, has been a distorted one.

To sum up, Sudan has a malformed economic structure, which is dominated by the services sector. Given the fact that this sector tends to have weak backward and forward linkages with other sectors, future development in Sudan would require substantial sectoral shifts.

3.3 Performance of the Economy During the Period 1970/71-1986/87

3.1 An Overview:

This section deals with growth of the economy's productive and importing capacity in relation to expansion in aggregate demand. Table (3.3) contains data[10] on GDP and its major expenditure components as well as per capita income for the period 1970/71-1986/87; all variables being measured at the constant 1980 prices. The data suggest that over the entire period, output has increased by an average of 2.6% per annum, and that on per capita basis there has been a consistent retrogression. The period under review witnessed the two oil price hikes of 1973 and 1979, and it is worthwhile to divide it into two sub-periods. First, the sub-period prior to 1977/78 represents one of rapid growth at an annual average rate of 7.6%. But, this impressive economic performance at ever high rates of growth was achieved mainly through huge inflows of foreign capital in the first half of the 1970s. Since then, these inflows were becoming gradually unavailable, making it difficult for the government to bridge the gap between actual and desired inflows of foreign resources in the second sub-period, 1978-1987. Towards the end of 1977, budgetary imbalances became unmanageable, and the International Monetary Fund (IMF) was called in to help contain mounting balance of payments problems and mobilize

Table (3.3)

Performance of Sudan's Economy 1970/71-1986/87 (at the constant 1980 prices)

Year	Real GDP	Consumption		Gross Domestic Investment	Exports	Imports	Per capita Income
		Private	Public				
1971-1977	3277.2	2375.1	497	549.3	397	527	202.3
1978	4388.1	3609	504	658	349	730	242.8
1979	3934.7	3217	492	544	283	601	211.4
1980	3972	3201	636	598	476	938	207.4
1981	4055.4	3502	646	606	407	1106	205.8
1982	4360.2	3706	705	865	292	1206	215.2
1983	4506.7	3757	631	807	371	1059	216.5
1984	4338.7	3562	647	741	533	1145	203.0
1985	3769.6	2989	627	648	275	769.4	171.9
1986	3972.6	3243	575	533	300	678.4	176.0
1987	4016.8	3169	595	459	270	475.7	173.0

Source: World Bank, World Tables, 1988/89 edition, PP.536-539.

Notes: (1) Exports-impotrs figures do not include factor services

foreign resources[11]. Nevertheless, judged by output performance, this was merely the beginning of an era of crises, started by a series of devaluations and escalating inflation. During the sub-period 1978-1987, the rate of real GDP growth was negative, averaging 0.83% per annum.

This fall in real output was coupled with a conspicuous contraction in the country's importing capacity as determined by export earnings and the terms of international trade. Measured at the constant 1980 prices, the growth of exports of goods and services (table 3.3) was almost sluggish over the entire period, and the terms of international trade were consistently and rapidly abating; from 100% in 1980 to the lowest level of 82% in 1986 (table 3.4). The declining trend of export earnings reflects the composition of Sudan's commodity exports, which is heavily weighted by primary products. For instance, primary agricultural output accounted for 82% to 92% of total exports between 1982 and 1987[12]. In addition to variations in their output, these products have very thin international markets, with widely fluctuating prices.

In contrast to the falling productive and importing capacity of Sudan, aggregate demand for goods and services maintained an annual rate of growth of 3.1% over the whole period under review. The bulk of this was due to expansion in private as well public consumption expenditure. The relative importance of various types of expenditure has shifted over time, but changes in current public expenditure seem to have been matched by counter changes in private consumption. As a result, aggregate consumption remained very high relative to GDP, and exhibited only a slightly rising trend. Gross domestic investment showed a tendency to fluctuate, but this associated mainly with private investment, whereas public fixed investment and changes in stocks were falling over most of the period considered.

Table (3.4)

Price Indices for Sudan (1980=100)

Year	Wholesale	Consumer	Exports	Imports
1974	42.9	43.5	71.2	58.4
1975	46.2	46.8	60.3	64.5
1976	47.7	49.1	78.0	63.4
1977	52.5	52.1	76.2	68.4
1978	65.7	65.3	79.6	77.4
1979	82.7	81.6	87.5	88.3
1980	100	100	100	100
1981	122.8	118.7	97.1	101.3
1982	154.1	150.1	83.6	94.7
1983	200.3	197.0	92.4	93.3
1984	253.0	244.8	88.8	92.3
1985	382.0	365.7	83.9	81.3
1986	506.5	502.3	71.3	86.1
1987	647.7	646.9	77.1	83.1

Source: World Bank, World Tables 1988/89, and The I.M.F.'s International Financial Statistics 1989.

Expenditure on foreign goods and services has revealed the most obvious trend. This is due to the structure of Sudan's imports, which is dominated by noncompetitive goods such as fuel, capital goods, transport equipment, and chemicals. These goods cannot be produced domestically, and the country cannot afford, at least in the short-run, doing without them if the process of development is to proceed.

In chapter 7, we find that Sudan's imports are closely and positively related to income. But, the regression equation below suggests that Sudanese imports (M), in real terms may not only be necessary for investment (I), but also for total Consumption (C). However, for the country to be able to meet its imports bill, import requirements should be kept at pace with the growth of exports (X). Estimating an import function for Sudan, using data for 1967-1987, the following results were obtained:

$$M = -18.8 + 0.245\,C + 0.33\,I + 0.635\,X$$
$$(-0.77) \quad (3.18) \quad (1.78) \quad (2.71)$$
$$R^2 = 0.63 \qquad D.W = 1.47$$

(t-ratios in parenthesis)

The above regression results suggest that real investment has a high import-content, which is greater than that of real consumption. But, the consumption coefficient is statistically more important than that of investment. This is not unexpected, because in the absence of capital goods industry in Sudan, and with the industrial sector share in GDP of less than 10%, the import-content of both investment and consumption is likely to remain high. The above regression results show a strong and positive relationship between imports and exports, which is theoretically consistent.

With foreign goods being highly needed for both consumption and investment purposes, it is not surprising that imports have been continuously rising, outstripping export earnings throughout the period considered. Consequently, the balance of payments maintained a high and increasing current account deficit, which jumped from 77 million Sudanese Pounds (Ls) in 1971 to the highest level of Ls 914 million in 1982, and declined to Ls 205 in 1987 (table 3.3, above.)

As we will see below, these persistent imbalances were reflections of the poor productive base of the economy and the uses to which resources were committed.

3.3.2 Factors Affecting the Productivity of the Economy:

It has already been indicated that during the 1970s and 1980s, there were many external factors that have contributed to the unsatisfactory performance of the Sudanese economy vis-a-vis foreign trade. These included massive rises in oil

prices, and the world recession which affected the market for primary exports very substantially.

Apart from external factors, there is also a host of internal factors, the combined effect of which provides the main explanation for the performance of the Sudanese economy over the period 1971-1987. These include gross misallocation of investible resources, low rates of capacity utilization in existing projects, rapid and large-scale out-migration, and fast deterioration and degradation of the economy's natural resources base.

As may be seen from table (3.5) below, gross domestic investment, including changes in stocks, averaged 15% of GDP per annum between 1974 and 1987. This rate appears to be on the average when compared to 15.3% for the poor nations of Sub-Saharan Africa, but quite low when contrasted with the investment-GDP rate of 24.6% for the developing countries of South Asia over the same period. The low investment rate is partly due to government policies which favour current consumption as against future consumption - see section (3.4). But, also as the discussion in section (3.5) points out the distribution of investment by sectors was inappropriate. An examination of the sectoral expansion of GDP reveals that the primary sectors, agriculture and industry, had contributed to its growth at the average annual rates of 1.4% and 0.4% respectively during the period 1971-1987; while that of the services sector was as high as 1.7% over the same period (World Tables 1988/89). The implication of this disproportionate expansion of the services[13] sector was an increasing divergence between the commodity composition of aggregate supply and that of aggregate demand; the latter being dominated by demand for material output owing to the low levels of per capita income. This also implies a change in the composition of investment in favour of less productive or service activities. Besides its weak

Table (3.5)

The Overall Resource Use 1970/71-1987/88 (% 0f GDP at current prices)

Year	overall Use	Consumption			Investment (1)				Domestic Savings		
		Total	Privat.	Public	Total	FPI	FBI	CIS	Total	Priv.	Public
1971-77	104.5	87.7	72.5	15.2	16.8	7.8	10.3	-1.3	10.8	10.8	00
1978	108.7	94.3	82.2	11.5	14.4	4.8	6.4	3.1	6.3	4.8	1.5
1979	106.6	93.4	80.9	12.5	13.2	5.4	5.0	2.8	6.6	4.7	1.9
1980	111.8	96.7	80.7	16.0	15.1	7.1	4.4	3.5	3.4	2.9	0.5
1981	113.3	98.9	83.0	15.9	14.4	6.0	4.3	4.2	1.0	1.1	-0.1
1982	117.8	98.8	82.7	16.1	19.0	8.9	4.6	5.6	1.2	3.3	-2.1
1983	113.4	96.0	82.0	14.0	17.4	12.7	4.4	0.4	4.0	2.5	1.5
1984	110.1	93.6	78.7	14.9	16.5	14.7	4.0	-2.1	6.4	8.0	-1.6
1985	108.3	92.1	75.5	16.6	16.2	12.8	2.9	0.5	7.9	15	-7.1
1986	108.6	95.5	81.0	14.5	13.1	8.6	3.2	1.3	4.5	12.4	-7.9
1987	105.0	93.8	79.0	14.8	11.2	5.5	4.7	1.0	6.2	12.2	-6.0
1988	114	103	81.2	21.0	10.8	2.0	8.8	n.a	n.a	n.a	n.a

Source: (1) W.B., World Tables (1988/89), (2) The Economic Survey (1988/89), Ministry of Finance, Khartoum.
Notes: (1) Gross Domestic Investment = Private Fixed Investment (FPI) + Public Fixed Investment (FBI) + Changes in stocks (CIS). n.a. = Not Available.

linkages with other sectors, the services sector has little contribution to exports and foreign exchange earnings, which are quite important in the financing of capital imports.

Meanwhile, the rate of capacity utilization was, probably, below the break-even point across the whole economy. For example, over the period 1981-1988, it ranged between 36% and 72% for the five sugar industries, remained firmly below 25% for public textiles, and never exceeded 50% for public tanneries(14).

Low capacity utilization rates are thought to be, principally, the result of inadequate energy inputs - the energy sector has received little attention in the development plans discussed in section 3.5 - and intermittent supplies of other essential intermediate inputs such as chemicals, fertilizers etc for agriculture and industry. In addition, services and maintenance for manufacturing were inappropriate due to lack of spare parts and increased emigration of skilled labour; out-migration seemed to have pervasive effects on the economy in recent years.

Table (3.5) above demonstrates that the overall resource use, inclusive of current consumption and domestic investment, sustained an annual average percentage of GDP of 110 over the period 1971-1988, perhaps due to net income transfers from abroad. Total consumption expenditure ranged between 93.4% in 1976 and 103% in 1988, while the domestic saving rate was, on the average, as low as 7% of annual GDP. However, both savings and investment declined considerably during the 1980s. Apart from current income, the Sudanese consumption behaviour has, probably, been strongly influenced by the flow of foreign resources and remittances by Sudanese nationals working abroad. As we shall see in section (3.4) below, foreign capital has met a substantial proportion of expenditure by the public sector. The use of these resources was not limited to capital expenditure alone, but also

extended to cover part of current public expenditure. This was clearly revealed by the fact that net foreign capital received by the government in some years was in excess of its capital expenditure in these years.

Out-migration began to assume importance immediately after the huge rises in crude oil prices in the 1970s, when oil-exporting Arab countries embarked upon enormous development programmes. Because of limited supplies of, particularly skilled, labour in these countries and the size of the programmes they undertook, there was a high demand for foreign labour, backed by generous incentives. For cultural and language similarities, Sudan is one of the main countries for Arab employers to consider.

Provided the multi-faceted nature of out-migration and the existence of unofficial channels through which migrants as well as their remittances may pass, it is difficult to give an accurate assessment of its impact on the Sudanese economy and society. It, however, began to assume importance in the late 1970s. It has been estimated that an average of about half million Sudanese nationals have been registered as migrants in oil-producing Arab countries over the period 1977-1988 (The Economic Survey, 1977/78, 1986/87, and 1988/89). Though this number is small relative to the total population of the country, the majority of migrants are skilled and professional manpower. About 49% of emigrants were medical Doctors, Engineers, Surveyors, and university Teachers, and this was also half the number of those professionals and academics working in the country at that time (Galal'eldin, 1988).

This undoubtedly has considerable adverse impacts on the economy, but it also means high earning ability on the part of Sudanese migrants. Although over more than 50% of migrants' remittances are transferred through unofficial channels, those sent through the banking system ranged

between 2% and 6.4% of GDP over the period 1976-1987 (World Tables 1988/89). As to the use of migrants' resources, Galaleldin (1984) reported that about 90% of savings is spent on weddings, consumer durables and housing, and only 10% is devoted to capital goods.

This suggests that the Sudanese nationals working abroad are contributing directly to increased consumption expenditure by their families at home. At the same time, returning migrants tend to behave in a way that manifests strong external demonstration effects in the sense that they attempt to keep up with the living standards they have observed or enjoyed in the rich oil-exporting countries. This behaviour could also lead to a consumption orientation among non-migrant families through internal demonstration effects. Thus out-migration may have influenced consumer behaviour in direct and indirect ways.

In brief, workers' remittances are likely to have encouraged conspicuous private consumption, and together with the inflow of foreign resources, raised the share of total consumption in GDP. Such consumption behaviour can hardly be conducive to output growth in view of the low rate of investment that accompanied it. In a country like Sudan, with low stocks of capital, extravagant consumption should clearly be curbed in order to release resources for investment, which is necessary if high future standards of living are to be attained. This requires a set of fiscal and monetary policies that are carefully designed to keep consumption within reasonable limits.

On top of the weak investment rate, and striking structural imbalances, the Sudanese economy was subjected to the unchecked actions of such natural forces as droughts, desert creep and soil erosion, which resulted in a spectacular deterioration in its natural resource base, besides climatic changes. (This had resulted in a tragic famine in 1984.)

Other factors relating to human action like the prevalence and expansion of traditional agriculture - shifting cultivation and unorganized animal husbandry in particular - as well as the unplanned spread of mechanized farming, were also to blame for deforestation and desertification.

3.4 Composition of Government Expenditure and Public Finance:

Public expenditure consists of central government recurrent expenditure and investment expenditure plus net public entities position. It has been indicated in the previous section that public consumption expenditure was increasing, particularly over the period 1980-1987. The major factors contributing to this expansion were, expenditure to finance the civil war in the South, expanding transfers to the then newly created regional governments, and increases in extra budgetary operations[15]. Indeed, the bulk of the rapidly expanding public expenditure had been on such unproductive, but politically necessary items, as security, and overexpanding public administration[16].

As table (3.6.1) may attest, current public expenditure accounted for about 80% of the total government budget over the period 1971-1987. Meanwhile, capital formation by the public sector fluctuated around an average of 4.4% of GDP per annum. The composition of current expenditure is made up mainly of local governments, and defense and security expenditure, as well as unclassified items. The latter is unduly high, claiming about 6% of GDP on the annual average. Adding current and capital expenditures by the public sector, we find that the activities of this sector constituted about 19.5% of the whole economy, in terms of GDP, over the period 1971-1987.

Table (3.6.1)

Composition of Government Expenditure (% of GDP at current prices)

Type Of Expenditure	1971-77	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1. Total	23.0	14.6	23.8	20.4	18.3	20.2	16.0	19.4	20.5	18.6	21.0
2. Investment*	5.9	6.4	5.2	3.5	2.9	4.3	3.6	4.4	3.1	1.8	4.5
3. Current:	17.1	14.2	17.6	16.9	15.4	15.9	12.4	15.0	17.4	16.8	16.5
a) Services**	3.7	3.2	3.1	2.1	2.7	1.4	1.1	1.3	2.5	1.9	2.3
b) Local Governments	3.0	3.0	6.8	5.9	4.7	2.6	2.0	2.5	2.5	2.8	3.9
c) Debt Servicing	1.9	1.1	0.8	0.1	0.9	2.1	1.7	1.9	0.8	2.3	1.8
d) Others	4.9	4.3	3.9	4.4	4.2	7.3	5.6	6.9	8.4	7.4	6.0
4. Defence and Security	3.5	2.6	2.9	2.9	3.0	2.6	2.0	2.4	3.2	2.4	2.5

Source: (1) Bank of Sudan Annual Reports, 1978, 1985 and 1988
(2) The Economic Survey 1977/78, Ministry of Finance (1978), Khartoum

Notes: * Excluding equity expenditure; ** Includes social and economic services.

However, contrasting tables (3.6.1) and (3.6.2), it is clear that increases in current public expenditure were out of tune with current tax and non-tax government revenues. The former averaged 19.5% of GDP per annum, while the latter averaged 14.2%. This gives rise to an overall average public deficit of about 5.3% of annual GDP between 1971 and 1987. Thus, the actual size of the public sector relative to the entire economy is, perhaps, much less than that indicated by its spending. It is alarming that tax revenue has been out of proportion with both GDP growth and expansion of public expenditure. Both direct and indirect tax revenues were falling as percentages of GDP, while non-tax revenue was stagnant. Yet, public expenditure remained at almost the same percentage of GDP. The low rate of increase of tax revenue, as the figures suggest, exemplifies the inefficiency and inflexibility of the tax system, a characteristic feature of LDCs. Non-tax revenue depends chiefly on public entities, but these have been in the red for almost the entire period 1978-1988. This happened not only because of the inherent inefficiency of public enterprises as such, but also and foremost because of wrong policies relating to prices, employment, and investment imposed on them by the political system[17].

In view of the above discussion one is inclined to believe that current public expenditure is unproductive, because had it been productive in any sense, it would have been possible for the public sector to generate comparatively high revenues in subsequent periods.

It is clear that the public sector was in need of alternative sources of finance to meet its current budget deficit, let alone the investment expenditure. The combined deficit of current and development budgets varied between 4.2% and 10.6% of GDP in 1980 and 1987 respectively. This raises the question of how the public sector managed to make

Table (3.6.2)

Financing of Public Expenditure (% of GDP at current prices)

Category	1971-77	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1. Tota Government Exp.	23.0	21.0	23.8	20.4	18.3	20.2	16.0	19.4	20.5	18.6	21.0
2. Government Revenue	17.1	15.7	19.5	17.4	15.3	13.8	13.9	13.4	10.3	8.9	10.5
a) Direct Taxes	2.0	1.7	1.9	1.5	2.3	2.1	1.9	3.7	2.1	1.7	1.6
b) Indirect Taxes	11.6	9.0	8.5	9.4	8.1	8.1	8.2	7.7	6.8	6.1	5.2
c) Others	3.5	5.0	9.1	6.5	4.9	3.6	3.7	2.0	1.4	1.1	3.8
3. Surplus (Deficit)	(5.7)	(5.3)	(4.3)	(3.0)	(3.0)	(6.4)	(2.1)	(6.0)	(10.2)	(9.7)	(10.5)
4. Public Entities' Position	(1.2)	(0.5)	(1.3)	(1.2)	(2.6)	(3.1)	(2.9)	(0.9)	(0.5)	(0.4)	(0.1)
5. Overall public Deficit	(6.9)	(4.8)	(5.5)	(4.2)	(5.6)	(9.5)	(5.0)	(6.9)	(10.7)	(10.1)	(10.6)
6. Financing of the Deficit:											
a) External	2.1	0.2	2.1	2.3	1.4	3.9	1.6	5.2	6.0	6.0	4.7
b) Domestic	4.7	4.7	3.4	1.5	4.2	5.6	3.4	1.7	4.7	4.0	5.9

Source: (1) Bank of Sudan Annual Reports 1980, 1985 and 1988.,
(2) The Economic Survey 1977/78, Ministry of Finance, 1978.

up for these huge financing gaps on a sustained basis?. The figures in table (3.6.2) above suggest that with respect to public expenditure cuts were possible only in the sphere of development expenditure, which exhibited a declining trend, whereas current expenditure showed no downward trends. This implies that, as far as the public sector is concerned, consumption has crowding-out effects on investment.

The aforementioned table also reveals that the financing of the overall deficit depended heavily on borrowing, both internally and externally. Despite the availability of soft long-term foreign loans to finance development expenditure at least partly, this source was inadequate relative to the amounts of investment undertaken. In effect, the public sector relied mainly on the domestic financial system which financed about two-thirds of the overall deficit in the period 1978-83. As capital markets are virtually non-existent, domestic sources of lending to the public sector consisted mainly of the central bank.

The central bank, by virtue of its Act, provides funds to the government in various manners. To avoid high inflationary consequences, the central bank attempts, first, to provide funds to the government by borrowing from other sources, or by utilizing funds the government helped to raise by such means as securities. Be that as it may, these sources were inadequate, and the central bank, under mounting pressures from the government, was compelled to increase its issue of currency (high-powered money) at phenomenal rates. The quantity of new money issued by the central bank rose from Ls 392 million in 1979 to Ls 5,844 million in 1988 (Bank of Sudan Report, 1988). And this was closely related to net domestic banking claims on the government, which increased from Ls 164 mn in 1978 to Ls 3,163 mn in 1988. This resulted in an unrestrained growth of money supply, which could have severe inflationary consequences and other adverse effects on

the economy as a whole, unless accompanied by similar expansion in real output. However, this has not been the case, and the growth of money supply may provide another explanation for the high inflationary pressures experienced by Sudan in the 1980s.

The discussion in this section indicates that conventional sources of government finance are inadequate and that the domestic financial system played a considerable role in the financing of public deficits.

3.5 The Sudanese Planning Experience: Policy Objectives and Obstacles:

This section analyses the planning experience of Sudan, with particular attention to the Six-Year Plan of economic and social development 1978-1983. It assesses plans' achievements against planned targets and objectives, and attempts to identify the obstacles encountered in the process of development in Sudan. To start with, these lie mainly in the structural bottlenecks, inadequacy of foreign finance and inappropriate allocation of resources in general and domestic resources in particular.

3.5.1 Development Planning During 1960-1977:

Development planning in Sudan was initiated by the government with the first development programme set up in 1946. This programme was followed by formation of a committee for the Five-Year Development Programme (1951-56). These pre-independence programmes comprised lists of investment proposals rather than detailed analyses of the country's needs and resources. After independence in 1956 and up to 1960, there continued to be no plans in the real sense; instead there were annual development programmes. The focus of these programmes was the expansion of the public sector, sometimes at the expense of the private sector, and they

allocated most of their budgets to public administration and social services. Nevertheless, considerable efforts were devoted to the construction of a macroeconomic framework, and projections of income, investment, sources of finance and the balance of payments' position. As a result of these efforts, modern planning started in 1960, with the Ten-Year Plan (TYP) of social and economic development, covering the period 1960-1970.

This plan aimed at increasing real output by an average annual rate of 5.2%; broadening the structure of the economy; increasing exports, with strategies for import substitution; improving social conditions and creation of employment opportunities. Planned investment expenditure during the Ten-Year Plan is summarized in table (3.7). Total envisaged investment expenditure amounted to Ls 472 million, of which 60% was to be made by the public sector and the remainder by the private sector. The plan gave top priority to social services (32%) and a minimum attention to the transport and communication sector. The plan, however, achieved moderate success in that real GDP increased at just above half the targeted rate, whereas per capita income remained unchanged, and the envisaged financial balance was not maintained. The reasons being escalation of the civil war in the 1960s which claimed a high proportion of public spending; political instability; inadequate feasibility studies for projects; and weak financial control[18]. But the plan did raise the share of the industrial sector in GDP, and diversified agricultural output, with some notable improvements in productivity.

The Ten-Year Plan was followed by The Five-Year Plan, 1970/71-1974/75, of social and economic development, which was designed in a socialist spirit under the then acclaimed scientific socialist government. This plan aimed at securing a 7.6% annual increases in GDP, and an increase in per capita income of 6.2% annually. To achieve these targets, a total

investment expenditure of Ls 385 was envisaged over the 5-year period - table (3.7). The plan placed emphasis on the most productive sectors of the economy; giving agriculture the largest share of 38.1% of total investment budget in the public sector, followed by industry which received 24%, while allocation for the services sector was 22%. The infrastructural sector, with only 14% of total public expenditure remained to be the most underallocated one. The public sector was given a leading role, assuming 55.8% of total investment, with the rest expected to be undertaken by the private sector. While 52% of public investment was allocated to the directly productive sectors, agriculture and industry, the bulk of private investment went to services, particularly housing.

Table (3.7)

Planned Investment During The TYP and The FYP (in Ls Million)

Sector	The Ten-Year Plan			The Five-Year Plan[1]		
	Public	Private	%[2]	Public	Private	%[2]
Agriculture	90	30	25	81	27	29
Industry, Mining and Power	42	65	23	49	24	20
Transport and Communication	63	32	20	30	30	16
Services	90	60	32	45	88	36
Other	-	-	-	-	1	0.3
Total	285	187	100	205	170	100

Source: Ministry of Culture and Information (1977) "The Six Year Plan of social and economic development, 1978-83", P.4.
Notes: (1) Figures pertain to the original FYP, 1970/71-1974/75; (2) Percentage of total planned investment, both public and private.

Domestic sources of finance were expected to provide for 48.8% of total public investment. The main source of domestic finance for the public sector was named to be government surpluses (public savings), with no resort to deficit financing. The remaining 51.2% was to be financed from foreign resources, mainly from socialist countries.

To strengthen the financial power needed to execute the plan, and in the course of socialism, the government nationalized all foreign banks, and foreign companies, as well as some domestically owned private businesses. In the first two years of the plan, the government made modest public savings and concluded a number of loan agreements totalling Ls 32 millions with a group of socialist countries, which financed most of the public investment projects undertaken. However, the plan was interrupted in the second year because of an aborted Military Coup in July 1971, which was tacitly supported by the Sudanese Communist Party. As a consequence, the Sudanese Communist Party was banned, and the country's development philosophy changed. And financial aid from socialist countries ceased. The only alternative sources of foreign finance were Western governments and institutions, and pro-western Arab countries. To create an environment attractive to foreign capital from these sources, the government amended the nationalization Act and embarked on a series of denationalizations[19].

Following this, foreign aid began to flow mainly from USA, West Germany, and UK, totalling Ls 24.2 million in the first year. In 1972 Sudan concluded agreements with the World Bank, USA, Kuwait and Lonhro group, to build the Rahad Agricultural Scheme, the second largest in the country, and Kenana Sugar Factory, the largest in the country. In addition, Sudan contracted loans to construct The Kassala-Port Sudan motorway and to improve the railway capacity. The types of loans Sudan received since 1972 were, however, either tied to the

purchase of certain goods or tied to projects initiated by lending sources[20].

As a result, many of the projects embodied in the FYP became impossible to implement, and the plan was soon supplemented in 1972 with a 5-year interim programme of action to cover the period 1970-1977. The extension of the original FYP to a 7-Year Plan (7YP) implied a new development strategy. The focus of the 7YP shifted to infrastructure largely because of the types of loans received and in the hope of stimulating foreign direct investment.

The inflow of foreign capital continued, reaching a peak of Ls 123 million in 1975. Despite, these huge inflows of foreign resources, the average utilization of planned public investment was 52.4%, while actual expenditure was 16% higher than planned expenditure. The Sudanese authorities attributed this to escalation of project costs, oil price hikes and a 20% devaluation of the Sudanese currency in 1972/73.

The plan, nevertheless, achieved some success in that the actual real rate of GDP growth was 7.6 % per annum between 1970 and 1977. But, this impressive growth rate was coupled with escalating balance of payments deficits and substantial increases in Sudan's foreign debt. For instance, external long-term public debt[21] outstanding at the end of year increased from US$ 327 million in 1971 to US$ 2 billion in 1977. This is nearly three times Sudan's export in that year. And even worse, with the majority of loans Sudan contracted to finance the 7YP being tied either to the purchase of certain commodities or to specific projects, there had been a marked imbalance in the distribution of investment expenditure among the different sectors of the economy. For example, the original 5YP allocated 38.1% to agriculture and 14% to transport and communications, while the amended one gave 32% to the transport sector and only 27% to agriculture. Furthermore, the amended plan made no allowance

for investment in the energy sector.

These shifts in emphasis were to a large extent responsible for the structural imbalances underlying the poor performance of the Sudanese economy, particularly in the post-plan period. Though the transport sector is vital, an integrated development plan should consider not only the availability of foreign loans to finance projects, but also how these projects would generate foreign exchanges for loan repayments. Added to this, the relative neglect of the energy sector resulted in acute power shortages, which in turn reduced the operating capacity of new as well as on-going projects across the economy.

In short, the availability and nature of foreign capital did not only determine the amount of investment, but also the type of projects executed. And this, together with intractable problems of political instability and civil war, adversely affected the structure and performance of the economy, with cumbersome debt-servicing problems.

3.5.2 The Six-Year Plan: Financing Crises and the End of Long-term Development Strategies:

The FYP was followed by an ever ambitious plan, the Six-Year-Plan (SYP), 1977/78-1982/83. This plan was set up as part of a perspective plan (1977/78-1994/95), whose fundamental objective was to push the economy into the stage of self-sustained growth by means of balanced and accelerated growth. This, the plan document states, requires well-studied long-run changes in the social and economic structure of the country; and the full mobilization of corporate and human resources, which should then be optimally used. Use should also be made of resources available from oil-producing Arab countries, and other advanced countries; Sudan was designated the "Breadbasket" of the Arab world, who liked to reduce its dependence on food imports from the West.

The prime quantitative objective of the SYP was to raise real GDP by an average annual rate of 7.5% over the plan period. Other objectives included: (1) conservation of the natural resource base of the economy; (2) development and transformation of the traditional agricultural subsector; (3) industrial expansion, particularly in the sphere of agriculturally-based industries; (4) promotion of infrastructure, including transport, communications and energy; (5) improvement of the balance of payments situation through increased exports and production of import substitutes; and (6) embetterment of social services and a more equal distribution of income.

Table (3.8.1)
Allocations of Planned Investment Of The SYP (in Ls million)

sector	Public Sector		Private Sector*		Total
	Amount	%	Amount	%	%
Agriculture	425	32	290	26	29
Industry, Mining, and Energy	335	25	200	18	22
Transport and Communications	320	24	180	16	20
Services	265**	19	430	39	28
Reserve	225***	14	-	-	8.4
Total	1570	100	1100	100	100

Source: As in table (3.7), above, PP.39-41.
Notes: * Includes the semi-private sector which comprises projects financed jointly by the government of Sudan, Arab Agricultural Authority for Development and Investment, and the Sudanese private sector; ** Includes social services and public administration; *** Not included in the calculation of percentage sectoral shares.

The plan, for the first time, recognized rural development as a base for the development of the national economy as a

whole. It had laid special emphasis on regional planning and co-operative movements. It had also sought to increase public as well as private savings, and suggested measures to encourage the private sector, both foreign and domestic.

To achieve its targets, the SYP contemplated a total investment expenditure of Ls 2,670 million, of which Ls 1,570 million was to be made by the public sector and the balance (i.e Ls 1100 million) by the private sector. The sectoral allocation of both public and private planned investment expenditure is shown in table (3.8.1) above. Of total public investment 32% was allocated to agriculture, 25% to industry, mining, and energy; 24% to transport and communications; and 19% to social services. This allocation seems to be a sound step towards eradicating the structural imbalances, which characterized the FYP's period. But, private investment was, expectedly, concentrated in the services sector, especially housing, which claimed 39% of total private investment.

An examination of the planned scheme of the financing of the six-year-plan indicates that, it was rather overoptimistic with regard to the availability of resources, both domestic and foreign. This is, particularly, the case considering the financing of public investment. The plan stipulated that 53% of total public investment would be financed from external resources; namely foreign loans and grants, and 47% from domestic resources - table (3.8.2) below. Of the latter, 61% was planned to be financed from public savings at trends in recent years, and additional fiscal efforts. The balance (39%) would be financed through borrowing from the domestic financial system. It has been assumed that over the plan period real GDP would grow at an annual average rate of 7.5%, and assuming a modest income-elasticity of 1, real public revenue would increase at the same rate. The plan also proposed measures to contain the

rate of growth of public expenditure, in real terms, within the limit of 6.6% per annum.

The SYP has, for the first time, recognized borrowing from the domestic banking system as a source of financing public investment. A recourse to this source was stipulated at 18% of proposed public investment expenditure. To achieve the desired increases in public revenue, the plan suggested the formation of a fiscal commission to study and devise measures to widen tax bases, and to review the rate and structure of both direct and indirect taxes. Also, to reduce current public expenditure, the plan indicated that a revision of public administration, accounting and employment is necessary. Be that as it may, the plan document was very vague considering the practical measures that should be taken if the plan were to be successfully carried out. For instance, the only measure indicated by the plan for improving the position of public enterprises was to propose the establishment of a public enterprise inspection and audit agency, which never materialized.

Table (3.8.2)

Sources of Finance for the SYP (public investment)

Source	Amount	Percentage
(A) Domestic Resources:		
1. public savings at recent trends	100	6
2.Borrowing from the financial system	285	18
3. Additional Fiscal efforts	350	23
Total	735	47
(B) Foreign Resources	835	53

Source: Ministry of Finance: The SYP of economic and social development 1977/78-1982/83, vol.1, P56.

As for the financing of private investment, foreign resources were expected to make up for 50% of total

investment expenditure, and the rest to be financed from private domestic savings. However, the plan suggested that the private sector has played a vital role in economic activity in recent years, and should, therefore, be encouraged. To mobilize private savings, the plan pointed out that the financial system, particularly the insurance industry, needs to be promoted. Among other policy suggestions, interest rates were proposed to increase to reasonable levels. Yet, real interest rates remained substantially below zero throughout the plan period.

The imprecision of the plan documents is an indication that the plan failed to identify the firm measures by which domestic resources may be mobilized, let alone the uncertainties surrounding foreign capital inflow. And it was precisely for the inadequacy of the financing strategies that the plan was declared dead[22] effectively in June 1979.

The plan's policy assumptions regarding public savings proved to be impossible to realize because of large increases in recurrent public expenditure. In the first two years of the plan current public expenditure rose by 28.4% and 29.8% respectively, while current revenue growth was quite sluggish, with a resultant current budget deficit over a number of years. Failure to realize the planned public savings entailed an increased borrowing from the banking system. Net banking claims on the public sector were Ls 517 million at the inception of the plan. These claims rose to Ls 962 million in 1979/80, i.e. increased by Ls 455 million against the ceiling of Ls 285 for the entire period of the plan.

On top of this, the inflow of foreign resources was below the plan estimates (Bank of Sudan Report 1983). Total foreign resources received were Ls 68 million in 1978 and Ls 230 million in 1979. Yet, these inflows consisted mainly of loans granted to Sudan to meet its previous debt servicing

(i.e. for debt recycling), with the result that gross external resources for development purposes[24] were as low as Ls 2.5 million and Ls 1.3 million in 1978 and 1979 respectively. Aid from Arab countries was completely halted in 1978 when Sudan became the first member of the Arab League to condone the Camp David agreement between Egypt and Israel.

As we have seen in section (3.3.1), the external balance was deteriorating largely because of sluggish growth of exports. This, together with unforthcoming foreign aid, caused delays in the supply of fuels, spare parts and machineries and equipment needed for development purposes.

With the major investment projects incorporated in the plan proved impossible to undertake, the implementation of the plan as a whole, within the limits of available finance, was halted by infrastructural bottlenecks[25], the very obstacles the plan had intended to overcome. The existing infrastructure, in particular transport, storage facilities, irrigation and power supply, proved to be inadequate. And even worse, the problem of development was further aggravated by local administrative and manpower constraints resulting from the rapid out-migration of skilled and semi-skilled manpower to the rich oil-exporting countries.

The apparent failure of the SYP to manifest itself in any proportion has not only led to an abrupt termination of the perspective plan, but also marked the collapse of any form of long-sighted development strategy.

As from 1979 the government embarked on loose three-year rolling public investment programmes, which could hardly form an integrated development strategy. These programmes which covered the period 1978/79-1986/87 were based on realized financial resources[26], and eventually made little or no effort to mobilize resources for future needs. The planned and actual investment expenditures of these programmes are summarized in table (3.9). Like those of pre-1960, the three-

Table (3.9)

Planned and Actual Investment Expenditure 1979-1987 (in Ls million)

Sector	1979-1980			1981-1983			1984-1986			1987		
	Planned	Actual	%	Planned	Actual	%	Planned	Actual	%	Planned	Actual	%
Agriculture	158.1	98.6	62.4	340.1	246.2	72.4	757	370.8	49	346.3	274.8	79.3
Industry & Minning	99.4	72.5	73	350.7	255.7	73	374	304	81	398	286	72
Transport and Communication	121.6	118.6	96	237.3	161.6	68	438	177.6	41	192.2	224.2	117
Services	69	62	90	138.6	60.4	44	341	146.2	43	146.5	111	76
Regional Development	24.6	-	-	179.3	131.6	73.4	348	306.6*	65	100.5	284*	189
Reserves	39.3	65.8	167	62	120.4	194	126			50		
Total	511.6	417.6	82	1308.1	913	70	2384	1310.1	55	1233.6	1180	96

Source: The Economic Survey 1983/84, 1986/87 and 1988/89 editions.

Note: * Includes actual regional development budget and reserves

year rolling public investment programmes have neglected the private sector altogether. One possible implication of this is the lack of coordination between public and private economic activities. This suggests a reason for the fact that fiscal and monetary policies, interest rates policy notably, adopted since then have made no consideration to the healthy operations of the private sector, be it real or financial.

These programmes were initiated under the policy advice[27] of the IMF and the World Bank (WB) and have, generally, been oriented towards reforming the economy, with the specific objective of achieving internal and external balances. As such they paid special attention to the rehabilitation and modernization of the existing schemes. It was claimed that the three-year-rolling public investment programmes would form a new development strategy; a one of stimulating and improving economic performance by enhancing the productive capacity of existing projects through vertical rather than horizontal integration. As part of the IMF-WB-inspired programme of reform, the new strategy was supported by a number of measures which included several exchange rate adjustments, foreign trade reform, adjustment of production relations in the irrigated agricultural subsector, and tightening of credit, perhaps, except for the government.

It is difficult to provide a quantitative evaluation of the performance of these programmes on their own grounds as there were no specific development targets over the period 1979-1987. However, a comparison of planned and actual investment expenditure on a year-to-year basis indicates that less than 70% of the moderate total investment allocations were realized. And in the light of the SYP's objectives, the envisaged real annual rate of growth of 7.5% turned to a negative rate of 0.83%.

Moreover, the public investment programmes failed to address the problem of structural imbalances. Infrastructure

bottlenecks, especially with respect to energy and transport and communications, have actually worsened. These are among the factors behind the poor performance of the economy as discussed in section (3.3). As we have pointed out in the previous section, the financial constraint was increasingly tightening over the period of the public investment programmes, and that the deteriorating budget deficit appears to have been accommodated mainly through borrowing from the domestic banking system.

This could have adversely affected private investment, which nevertheless maintained nearly the same percentage rate of GDP. However, the composition of private investment was geared excessively towards less productive projects, in particular services activities, for reasons we have already elaborated in section (3.3.2).

To conclude, development planning in Sudan relied excessively on foreign sources of finance and failed, at least at the level of policy making, to adequately recognize the importance of domestic sources for the financing of both public and private investments. Nevertheless, the domestic financial system, though poorly structured, has made substantial contributions to the financing of public consumption and development expenditure. But, it seems that the resources made available to the government internally as well as externally were grossly misallocated, as the persistence of structural imbalances and the low rate of capital formation may indicate.

3.6. The Domestic Resource Gap and Foreign Capital Inflow:

It has been mentioned previously that the SYP and the three-year rolling programmes of public investment were rather unsuccessful, mainly because they underestimated the real magnitude of the resource gap. Both the internal and

external resource gaps were higher than their expected levels. For the purpose of this study it might be constructive to examine the magnitude and trends of the domestic resource gap and attempt to explain the tendency of the gap to widen over time.

Over the period 1974-1988, though domestic resources contributed substantially to the financing of total investment executed, a sizeable proportion of this total was left to be met by foreign resources. The relationship between the domestic financing gap and the continuing resort to foreign resources may be demonstrated in the context of national income accounting, where:

3.1 Income = Consumption + Investment + Exports - Imports

Since domestic saving is measured by the difference between income and consumption, we obtain:

3.2 Saving = Investment + Exports - Imports

It follows from the above equation that:

3.3 Investment - Savings = Imports - Exports

The difference between investment and saving is known, in the literature[28], as the domestic resource gap, and the excess of imports over exports as the foreign resource gap. In the context of planning, the foreign exchange gap measures the amount by which the imports required for a given level of output exceed the amount of exports that is expected to be available at that level of output. Similarly, the domestic resource gap is the difference between the volume of required investment for a target rate of growth and the amount of domestic savings expected to be associated with that growth rate.

One of the major objectives of development planning is to reconcile the difference between the two gaps. The savings

gap may be reduced by means of reducing consumption and/or promoting savings. Alternatively, it may be possible to lower the total investment required per unit of output. This can be done by affecting the capital-output ratio through changes in the composition of investment projects or by raising the productivity of capital inputs. The foreign exchange gap could be reduced through exports promotion, reduction of imports, or by increased absorption of additional amounts of foreign resources.

While there is no reason that the two gaps be equal ex-ante, they are necessarily equal ex-post. Growth is said to be constrained by the dominant gap. For example, if the foreign resource gap is larger than the domestic resource gap, then growth would proceed at the highest rate permitted by the inflow of foreign resources, and vice versa. But, the magnitude of the two gaps is wider the smaller the proportion of domestic investment that is financed from domestic resources.

Table (3.10) below gives the size of the investment-saving gap and the concomitant inflow of foreign resources over the period 1977-1987; all variables are measured as percentage of GDP. It can be easily seen from the table that the domestic resource gap has been increasing, although the investment rate was dropping. This indicates the inadequacy of domestic savings, which encompass private (household and corporate) savings and public savings.

Public savings, as we have seen in section (3.4), have been negative almost throughout the period under review. Thus, it follows that the private saving rate was much higher than the overall rate of savings shown in the aforementioned table. The rate of gross domestic saving in Sudan, which maintained an annual average of 5.3% of GDP during 1977-1987, is very low compared with that of 13.9% for Sub-Saharan Africa and 18.5% for East Asia for the same period (World

Tables,1988/89). Yet, this very low rate of gross domestic savings is not surprising, because of the stupendous expansion of private consumption, which means that very meagre resources were left for saving formation.

Table (3.10)

The Domestic Resource Gap and Inflow of Foreign Resources (% of GDP)

Year	Foreign Savings*	G.D.Savings	G.D.Investment
1971-77	5.7	10.8	16.8
1978	5.7	6.3	14.4
1979	4.7	6.6	13.2
1980	8.4	3.4	15.1
1981	10.6	1.0	14.1
1982	14.8	1.2	19.0
1983	4.0	17.4	5.8
1984	6.4	16.5	6.7
1985	7.9	16.2	5.0
1986	4.5	13.1	6.0
1987	6.1	1.2	5.0

Source: World Bank, World Tables 1988/89.
Notes: *Foreign savings approximated by the current account balance. It is worth mentioning that the current account balance reported here does not include exports and imports of factor services.

During the period under investigation, 94.8% of real annual GDP was absorbed by current consumption, leaving on average only 5.2% as savings. The literature on consumption (e.g Rowan 1983) suggests that high income groups save more, proportionately as well as absolutely, than low income groups. Private consumption is expected to decrease (or increase) relative to wealth, and rise, decline or remain the same with interest rate changes. But, it seems that these factors have, on the balance, contributed to increased

consumption in Sudan. This signifies either that the high income group is very small relative to the rest, or that various income groups have similar and high consumption propensities, which is more likely to be the case.

It is generally acknowledged that due to soaring inflation, there has been a marked skewness in the distribution of income in Sudan, but this was associated with comparable increases in the consumption propensities of the beneficiary classes. For example, M. Diab (1985) demonstrated that the 1978 devaluation-induced inflation has resulted in an increase in income from profits of 6%, while real income from wages has declined by 4.5%. And in the same post-devaluation period, consumption from wages slipped by 4.2%, whereas that from profits rose by 6.2%.

There are, therefore, reasons for the poor private savings performance vis-a-vis the consumption behaviour of various income groups. The poor classes of the population, with too little income, both in absolute and relative terms, can hardly afford the basic necessities of living. On the other hand, the relatively rich classes opting for bushy styles of living, perhaps as a result of international demonstration effects, have also maintained a high propensity to consume.

Apart from that, the negative real rates of interest, characteristics of a substantial part of the period considered, have possibly fostered consumption as against savings, particularly on part of the rich groups. Negative real rates of interest would discourage accumulation of savings both on the part of households and businesses. Households would be less inclined to save, at least in the form of financial assets, because the real value of their savings will decline as long as real interest rates are below zero. Meanwhile, cheap bank loans with easy access signal a strong incentive for businessmen not to save. The outcome of all these factors[29] would be an accentuated consumption

behaviour, poor domestic savings rate, and excessive reliance on foreign savings; external debt of Sudan was US$ 8 billion in 1984, and soon reached $ 11.9 by 1988 (Bank of Sudan Report, 1988, P.45).

By way of conclusion, the public sector has a tendency to dissave while the private sector has a low propensity to save; and that the level of domestic savings continued to fall short of desired investment. Fiscal policies failed to restrain private consumtion, but fostered that of the public sector, while monetary policy may have actually favoured consumption via negative real rates of interest.

3.7 Summary and Concluding Remarks:

The main objective of this chapter was to evaluate the performance of the Sudanese economy over the last two decades, and discuss development policies and problems.

Starting with the economic potential and structure, it is obvious that the country is well endowed with various types of resources. However, most of these resources are still idle, or underutilized; and the economy was, thus, unable to transform its underdeveloped structure, which continued to present a challenge to development action. The structure is characterized by poor infrastructure, and marked sectoral imbalances in favour of less productive sectors.

The performance of the economy, measured by real GDP growth, was unsatisfactory over most of the period studied, and has been in the decline throughout the 1980s period. Despite the presence of huge unemployed resources, aggregate demand continued to exceed output, causing severe inflationary pressures in the economy. This was accompanied with sizeable external and internal imbalances.

The discussion in this chapter showed that the public sector maintained high and rising deficits, and that the tax system failed to raise enough revenues for the government to

curtail these deficits. Hence, the government relied heavily on internal as well as external borrowing to finance its deficits.

Although foreign resources were easily available in the early and mid 1970s, this merely helped to generate a malformed economic structure. Foreign resources, together with those made available domestically, were grossly misallocated, either because of the nature of foreign capital, or failure on part of the government to contain its current expenditure. The former adversely affected the composition of investment projects undertaken, while the latter reduced the volume of investment.

With marked decline in the availability of foreign capital on the one hand, and investible resources in general, on the other, long-term development planning became impractical. Since the premature termination of the Six-Year Plan in 1979, there has been no well-studied integrated development strategy.

Though domestic absorption was increasing relative to GDP, it has been falling in real terms. But domestic capital formation was declining in both absolute and relative terms. For the country to move towards self-reliance, which is inevitable in the future, the government ought to take effective measures to tap up resources for investment, and to allocate these resources as productively as possible.

It seems that the private sector has come to play an increasingly important role in the process of development. Private savings were much higher than public savings over the entire period considered. Moreover, the domestic financial system, besides accommodating the needs of the private sector, has been the main provider of funds for the financing of public deficits. This was true in spite of the fact that the financial sector is not well structured, and that government policies have failed to recognize the strategic

role of this sector, and consider ways of promoting it.

It therefore seems that the development of the domestic financial system is necessary if the country is to reduce its dependence on foreign resources, and progress towards self-reliance and self-sustained growth. Meanwhile, it might be of strategic significance that public sector investment efforts be oriented towards elevating the infratructural bottlenecks, which cannot be catered for by private investors. Provided that an adequate infrastructure, particularly in the sphere of transport and energy, exists the private sector may play a more profound role in real capital formation.

Notes:

1. Several studies have stressed the richness of Sudan in terms of its natural resources- see e.g. Ali (1984), PP.6-8.
2. The economic Survey 1988/89, P.29.
3. In A. Ali (ibid).
4. Recent estimates by the department of statistics, in the Economic Survey 1988/89, P.1.
5. Gurdon (1985) analysed the efforts done in the area of oil explorations, and concluded that the country has substantial oil resources, PP.76-86.
6. Sudan has been classified as a low income developing country by the World Bank in World Debt Tables: external debt of developing countries. 1988/89 edition, Washington D.C.
7. According to the Economic Survey 1988/89, P.90.
8. A detailed study by Abu Affan (1985) also indicates that the manufacturing subsector has remained virtually a light consumer goods producer.
9. See e.g The World in figures (1984), editorial Information compiled by the Economist Magazine, England, pp.64-96.
10. It should be mentioned here that Sudan is lacking comprehensive data gathering by the government and semi-official agencies. This creates some data gaps, which are more serious with regard to the private sector's statistics. Different sources may provide, somehow, different figures. To achieve some uniformity of data, we have tried to rely as far as possible on one source of data.
11. The government, with the help of the I.M.F., embarked on a programme for stabilization and economic recovery. This included a package of measures for economic adjustment carried out over the period 1978-1984. For details of the programme see Ali (1985).
12. The economic survey 1986/87, P.206.
13. Investment in the services sector is highly attractive because of its relatively small capital requirements, short production cycles which mean quick pay back, as well as ease to enter, leave or move within the sector.
14. The Economic Survey 1983/84, PP.30-38; 1986/87, PP.30-43; and 1988/89, PP.41-46.
15. Ministry of Finance (1987): Macroeconomic Task Force, P.8.

16. Current public expenditure is made up mainly of wages and salaries due to overstaffing of government departments, which are very inefficient (El-Jack,1986).
17. I.M.F diagnosis in Ali (1985), P.18.
18. Lees and Brooks (1977) survey the factors behind the failure of the TYP, PP.127-130.
19. For a further discussion of the nationalization and de-nationalization measures see Hussein (1983).
20. Hussein (ibid).
21. Figures on Sudan foreign debt are taken from World Tables,1988/89, PP.538-539.
22. Bank of Sudan Annual Report 1983, PP.101-106, gives a summary of the reasons behind the failure of the SYP.
23. Figures calculated by Bank of Sudan in its Annual Report 1980, PP.55.
24. Ministry of Finance (1981): The Three year public investment programme, P.40.
25. The same source as in 24 above.
26. As in note 24 above.
27. As in note number 11 above.
28. See e.g Thirlwall (1983), P.289.
29. The importance of these, and other, factors influencing Sudanese consumption propensities is quantitatively examined in chapter 7.

CHAPTER 4

THE STRUCTURE OF THE FINANCIAL SYSTEM AND OPERATIONS OF THE BANKING SECTOR

4.1. Introduction:

It has been shown in the previous chapter that the Sudanese economy suffered from alarming internal and external imbalances over the last decade, though the domestic financial system has contributed substantially to the financing of public deficits. The analysis there, however, dealt mainly with the public sector, whereas the focus of this chapter will be on the private sector.

The prime objective of this chapter is to examine the evolution and structure of the Sudanese financial system, and its contribution to monetary growth as well as real economic development. In particular, the chapter attempts to evaluate the function of the central bank in promoting and regulating financial markets, and the role of commercial and development banks in the mobilization and application of investible resources. The chapter, then, discusses and assesses the efficiency of monetary and credit policies implemented over the period of this study. The theory and practice of Islamic banks, which form a distinct category of commercial banks, is investigated in chapter 5, whereas the operations of non-bank financial intermediaries will be discussed in chapter 6.

The chapter demonstrates that commercial banks have contributed to a remarkable financialization of savings. But, it is also argued that commercial banks tend to behave in the same manner of concentrating excessively on short-term lending, whether they are regulated or free from interest rate and other restrictions. Moreover, recent monetary and credit policies in Sudan, far from encouraging development finance, have impaired the growth of financial

intermediation, and induced banks to focus more exclusively on short-term activities, which might be more inflationary. It is argued, therefore, that there is a need for banking regulation, which ought to be genuine.

The rest of the chapter is divided into 6 sections. Section (4.2), examines the historical development and the present structure of the financial system. Section (4.3), considers the character and performance of the central bank, while section (4.4), deals with the deposit and credit operations of commercial banks. The analysis, here, also draws on the findings of interviews conducted with senior research Officials in these banks. Section (4.5), evaluates the experience of specialized banks, and the Post Office Savings Deposit Bank. In section (4.6), the monetary and credit policies adopted, particularly over the last decade are discussed, and critically evaluated. Finally, section (4.7) gives a summary and concluding remarks.

4.2 Evolution and Structure of the Financial System and its Impact on Liquidity

4.2.1 Evolution and Structure:

Since the fall of Sudan under the Anglo-Egyptian rule in 1898, and up to independence in 1956, the currencies in circulation were the Egyptian Pound and British notes and coins[1]. This currency system was accompanied by a banking system consisted of six commercial banks, all of which were of foreign origin.

Immediately after independence, the Sudanese Currency Board was set up to issue the first new Sudanese Currency in 1957. Foreign currencies were, then, gradually replaced by Sudanese notes and coins, and completely disappeared from circulation the following year. But, the banking system continued to be dominated by foreign banks. An important feature of this

banking system was that banks were not regulated, and as such they were free to carry on providing services in connection with colonial objectives. For these banks, national economic interest was of little importance, and they remained exclusively within the boundaries of the modern sector in general, and foreign trade in particular.

To bring the banking system under control, and in line with national interest, the central bank of Sudan Act[2] was passed in 1959 and the bank (Bank of Sudan) commenced operations in 1960. The main function of the bank, then, was to free domestic money and banks from foreign domination, and to help developing a sound monetary and credit system.

The central bank, however, managed to free the Sudanese currency, which was directly linked to the Pound Sterling. With respect to the development of the banking industry, the central bank, besides a number of branches it has inherited from the national bank of Egypt, has, by 1964, opened 7 branches in provincial capitals, and another branch and a clearing house in Khartoum. Moreover, by 1966, the central bank helped establishing three specialized banks and two national commercial banks. Nevertheless, up until 1970 commercial banks were dominated by foreign capital and expertise.

In 1970, all commercial banks and some other deposit-taking institutions were nationalized[3]. This development was part of the then pro-socialist government strategy to tap financial resources, and allocate them in a more efficient pattern from a national economic point of view. The size of the banking sector was limited to 5 commercial banks, and 3 development banks, which were all under the ownership and control of the central bank.

However, the nationalization Act was abandoned in 1972 and replaced by a series of de-nationalization strategies, which encouraged the establishment of private banks, both foreign

and domestic. The period 1973-1979 witnessed a relaxation of banking control as the central bank's Act was amended twice to give extra legislative power to the Minister of Finance regarding credit control and licensing of new banks and banks' branches. As a result, the number of banks increased from 8 in 1973 to 14 by 1979.

But, a considerable boost to the expansion of the banking network was yet to come. Throughout the period from its incorporation and up to 1979, the central bank, in coordination with the Ministry of Finance assumed full control and regulation of the exchange rate as well as foreign exchange transactions. Commercial banks were required to refer to a foreign exchanges Committee, set up by the bank, each and every transaction involving foreign exchanges over a certain maximum(4). Accordingly, commercial banks whose lending was dominated by the financing of foreign trade were restricted.

In 1979 a foreign exchanges deregulation Act(5) was passed, and banks as well as individuals were allowed to freely transact in foreign currencies. The Act also permitted the establishment of private foreign exchange bureaus, which were to operate in a free foreign exchange market. This inspired banks, business groups, and even individuals to set up their own bureaus, provided the unlimited profits which could be reaped merely from the buying and selling of foreign currencies, let alone the thrust this may give to foreign trade, which was also liberalized to a greater extent. Following these developments, the number of banks had nearly doubled by 1986, while the increase in banks' branches over the same period was much less impressive.

Another and equally important reason for the rapid expansion of banks was the increasing resurgence of Islamic ideals, which was manifested in the establishment of banks that operate according to Islamic principles of finance. The

Table (4.1)

Geographical Spread of Banking Network as at 1988

Region	Bank of Sudan	Development Banks	Commercial Banks			Total		Population*/bank	
			National	Joint	Foreign	1978	1988	1978	1988
Khartoum	1	6	52	39	7	49	105	32.7	20
Central	2	24	22	17	-	30	65	117	70
Eastern	2	7	22	17	1	23	49	82.6	51
Northern	1	8	7	12	-	12	28	83	43
Kordofan	1	6	15	10	-	16	32	168.8	109
Darfur	1	3	9	6	-	12	19	225	206
Southern	1	4	11	1	-	11	17	427.3	353
Total	9	58	138	102	8	153	315	118.3	74

Source: Bank of Sudan Annual Reports 1978, P150, and 1988, P.116

Note: * Thousands of population per bank branch.

first Islamic bank was opened in 1978, and was soon followed by another 5 Islamic banks, which all consider fixed interest rates as illegal.

The discussion, so far, has been confined to banking institutions. But, in addition to banks, the present financial system of Sudan comprises 5 investment and holding companies, 16 insurance companies, and a pension fund. The banking sector, however, accounts for over 80% of the total assets of the financial system and, therefore, dominates its entire structure. The central bank is on the top of the banking structure, which consists of 23 commercial banks; 4 specialized banks; and a post office savings deposit bank. Five of the commercial banks are government-controlled; 12 jointly owned by the private and public sectors, but dominated by private capital; and 6 are branches of foreign banks. Six of the joint banks were established on strict Islamic principles. One implication of this large number of banks could be increased competition among them, but considerable diseconomies of scale may exist, entailing a less efficient banking system.

Be that as it may, this large number of banks is supported by just 315 branches in 1988, with a marked concentration in a few urban centres. As table (4.1) above indicates, the geographical dispersal of banks makes their services highly inaccessible to citizens in some provinces. The number of population per bank's branch ranged between 20,000 in Khartoum to 353,000 in the Southern Region. This suggests that banks can only play a limited role in the spread of banking habits and economic transformation via monetization and financialization of savings in remote provinces.

4.2.2 The Financial Sector and Liquidity Growth:

In general, however, the formal financial sector has contributed substantially to the growth of liquidity over the

Table (4.2)

Money Supply, Output, and Price Changes in Selected Years: 1960-1988

Year	Currency	Demand deposits	M1	Time and Saving Deposits	M2	GDP	FIR	FI2	CPI*
1960	20.2	16.9	37.1	2.1	39.2	339.0	12	5.4	14.8
1964	33.3	29.2	62.5	8.2	70.8	464.1	15.3	11.6	17.8
1968	47.0	33.9	80.9	17.1	97.9	536.3	18.3	17.5	17.6
1970	66.8	48.8	115.6	14.3	129.9	761.1	17.1	11.0	20.7
1972	75.2	69.2	144.4	21.7	166.1	896.8	18.5	13.1	23.8
1974	118.8	118.4	237.2	40.6	277.7	1510.8	18.4	14.6	34.6
1976	152.8	197.4	350.2	62.0	412.2	2339.7	17.6	15.0	43.6
1978	279.1	354.4	633.5	117.2	750.7	5253.8	23.1	15.6	60.8
1980	508.2	589.2	1097.4	166.8	1264.2	4951.0	25.5	13.2	100
1982	820.4	1270.6	2091.0	443.1	2324.1	6720.0	37.7	17.5	156.6
1984	1247.2	1517.0	2764.2	954.8	3719.0	11311	32.9	25.7	274.3
1986	2760.3	3088.5	5848.8	1964.0	7812.8	22009	35.5	25.1	504.2
1988	5601.4	5616.6	11218	2990.5	14209	27489	51.7	21.1	694.7

Source: Bank of Sudan Annual Reports, various editions.

Notes: * 1980 = 100; Demand deposits refer to private demand deposits with commercial banks,and M2 does not include cenrtral government deposits.

last three decades, as depicted in table (4.2) above. This table contains data on money supply and its components, GDP, and price level changes. Money supply is both narrowly defined as M_1 (currency and demand deposits) and more broadly defined as M_2 (M_1 plus time and saving deposits).

As we have seen previously, there are many indicators of the degree of a country's financial development, and that the focus of the literature has been on the ratio of M_1 or M_2 to GDP. The level of financial development in Sudan, and in many other LDC's, may be closely approximated by the ratio of real M_2 to GDP. The use of M_2 is justified on the grounds of its overwhelming proportion in the volume of outstanding financial assets of the non-bank private sector.

In addition to the ratio of real M_2 to GDP, or the Financial Interrelations Ratio, FIR, table (4.2) presents the ratio of quasi-money to M_2, FI2, as an indicator of financial deepening. This ratio has a particular importance in the context of economic development because it reflects the ability of the banking sector to create, especially, medium and long-term credit (Vogel and Buser, 1976). That is, financial development is more likely to be growth-promoting, if it is accompanied by an increasing share of relatively stable financial assets such as time and saving deposits in total money stock.

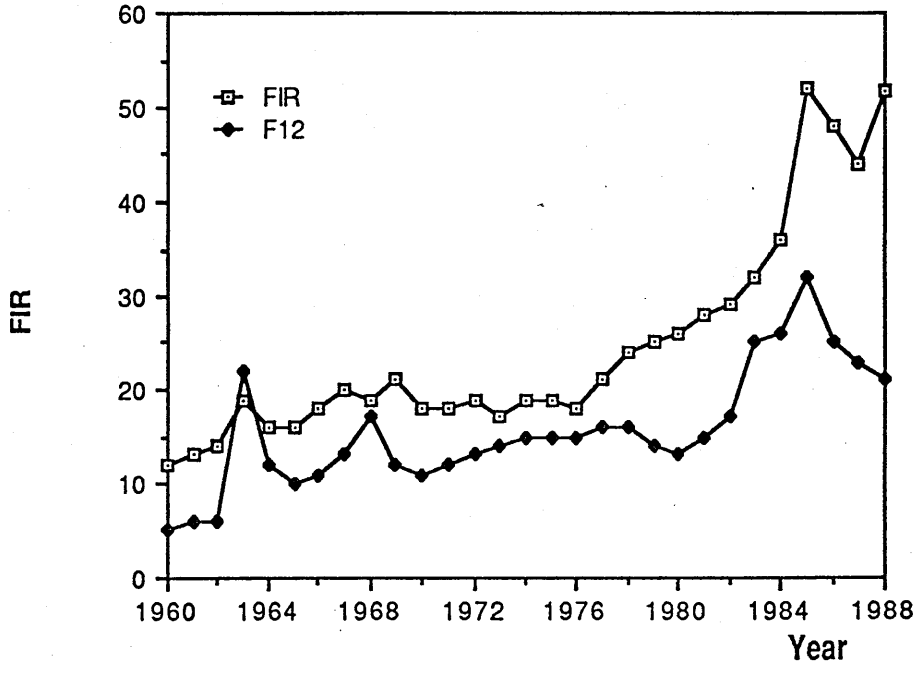
It can be, easily, seen from the aforementioned table that FIR was, generally, increasing over time, starting from the minimum of 12% in 1960 to the maximum of 52% in 1985. Similarly, FI2 varied between 5% in 1960 and 32% in 1985. The temporal behaviour of the two ratios is depicted in figure (4.1), in which FIR exhibits three identifiable trends. These patterns of behaviour correspond roughly to the sub-periods 1960-70, 1971-77, and 1978-88.

In the first sub-period, FIR was generally rising at a steady and low rate. The 1960s era represents the early

stages of monetization of the Sudanese economy, during which the rate of monetary expansion was slightly ahead of that of real GDP. FIR was relatively stable over the sub-period 1971-1977, which was characterized by a moderate and stable rate of price change as well as a low, but declining rate of growth. Moreover, it is understandable that the assets of the financial sector were not growing relative to GDP, since it was subjected to nationalization and a host of destabilizing economic policies. In contrast during 1978-1988, FIR had been steeply increasing, reaching 52% in 1985. However, though the Sudanese economy became more fully monetized or financially developed during this period, the overall real rate of economic growth was negative, averaging 0.82% per annum. It is , therefore, not straightforward to draw any conclusion concerning the economic impact of such development.

Figure (4.1)

Some Indicators of Financial Development



It may be interesting to compare the periodic behaviour of FIR and FI2. The latter, though increasing, was generally stable over the entire period under review. But, it was remarkably high in 1963, 1968 and in the sub-period 1983-86. The increases in FI2 in the first two years were attributed(6) to relatively high real interest rates brought about by an upward adjustment of nominal rates. Conversely, FI2 remained stable between 1978 and 1982 due to rigid nominal interest structure and relatively high inflation rates. There is a tendency for the two ratios to vary in the same direction over a number of years, i.e. changes in the ratio of time and saving deposits to M_2 seem to coincide with similar changes in M_2 relative to GDP. This suggests that the degree of substitution between income-earning and non-interest-bearing financial assets is rather weak.

To examine the causal link between money and credit on the one hand, and output on the other, we have applied the Granger's causality test, which was introduced in chapter 1. Money is measured as above by M_2, which shows the real size of the financial sector, credit, C, represents total bank advances to the private sector, and output is measured by GDP; all variables being measured in 1980 constant prices and in log-form. The data cover the period 1960-88, and the test was applied with a maximum of 3 periods lag. The regression equations are not reported here, but the summary statistics form of the causality test is shown in table (4.3) below.

The results of the test suggest that there is only one significant causal link running from M_2 to GDP. This supply-leading finance implied by the test, however, has little support from the behaviour of the FIR, which was generally rising though real output was falling over a considerable period of time. An in depth investigation of the economic impact of the growth of financial intermediation would require an examination of the size and nature of deposit and

credit facilities of financial institutions. But, first, we discuss below the part played by the central bank in promoting monetary growth and stability.

Table (4.3)

Causal Relations Between Money, Credit and Output

Regression equation	F-test
GDP on M_2	4.37*
M_2 on GDP	0.31
GDP on C	2.09
C on GDP	0.66

* Statistically significant at the 5% level, with (3,19) degrees of freedom

4.3 The Central Bank: Objectives, Power, and Operations;

4.3.1 Objectives and Power:

The central bank commenced operations in 1960, as a corporate body, with an authorized capital of Ls 1.5 mn, fully paid by the government. This, together with reserves, increased to Ls 59 mn by 1987. The main objectives of the bank of Sudan, in common with central banks in general, are: (1) to regulate the issue of notes and coins; (2) to help developing and maintaining a sound monetary, credit and banking system, with a view to orderly and balanced economic development of the country; (3) to sustain the external balance, and stability of the currency; and (4) to serve as a banker and financial advisor to the government(7).

To carry out its functions, the central bank is entrusted with the sole right of currency issue, and empowered, first, to formulate and implement, in connection with the Ministry of Finance, monetary and credit policy. Second, to promote and develop domestic money and capital markets. The bank may subscribe to, buy, hold or sell shares, of any enterprise,

the participation in or the initiation of which is generally in the interest of the national economy (Article, 64). Third, to regulate and supervise the activities of commercial banks. The bank has the power to issue and enforce instructions to commercial banks or any person who carries out banking business. In addition, the central bank controls the issue of licenses for new banks and banks' branches, and acts as lender of last resort. Fourth, to act as a depository and manager of the official foreign reserves of the country. Finally, to participate in the management of the balance of payments, and foreign exchanges of the country. Here, the central bank determines the exchange rate for the Sudanese pound, administers allocation of import licenses as well as foreign exchanges, and monitors capital transactions and official debt-servicing.

The internal concern of the bank of Sudan, in recent years, has, largely, been the control of money supply in general and credit in particular in the interest of stabilization and development. In this respect, the bank of Sudan Act, besides enabling it to restrain lending by commercial banks, sets statutory limits on its lending to the government. However, the bank is vulnerable to pressures by the government, which has, frequently, bypassed its Act. The effective control of the bank's activities by the government is ensured by section 20 of the Act, which reads:

> "The President of the Republic, after consultation with the Board, may from time to time give the Board directives of a general character as to the exercise by the Board of its functions provided for in this Act or in any other Act in matters, which appear to the President to affect the national interest; and the Board shall carry out such instructions" (P.12).

This clearly enables the government to undermine the bank's

position as a corporate independent entity, and as we shall see below, this has considerably influenced its ability to meet its policy objectives.

4.3.2 Banking Operations of the Central Bank:

Besides its role in the design and execution of monetary and credit policy, and promotion of the financial system, the central bank is engaged in various banking activities. The most important of these are issue of currency, and financial relations with the government, public agencies and commercial banks and the management of external reserves. The operations of the bank of Sudan in selected years over the period 1970-1988 are summarized in tables (4.4.1) and (4.4.2) below. The liabilities side of the bank's balance sheet - table (4.4.1) - reveals that: (1) there are huge increases in currency issue, which maintained an average annual rate of growth of 43% over the period 1978-1988. (2) Local banks' deposits have, substantially, risen particularly between 1981 and 1988. This reflects increases in reserve requirements, and recent procedures which require commercial banks to redeposit their liabilities to foreign suppliers in frozen accounts with the central bank, until the latter is able to transfer them in foreign currencies. (3) In contrast, government deposits in the 1980s are sinking deep in the red. These increased by 73% in 1987, and recorded a total overdraft of nearly six billion Sudanese pounds; because these overdrafts are supposed to be of a very short-term nature, they appear on the liabilities side of the central bank balance sheet. (4) The bank' capital and reserves also increased to Ls 73 mn in 1988, but they represented just 0.6% of its budget. Other liabilities have also been rising considerably.

On the assets side, the figures in table (4.4.2) suggest that: (1) Net foreign assets have been sharply declining, reflecting the recurring balance of payments deficits, and

Table (4.4.1)

Bank of Sudan's liabilities: 1970-1988 (In Ls mn)

Year	1970	1975	1978	1980	1982	1984	1986	1988
1.Notes and coins	69.5	132.2	287.4	522.5	853.6	1307	2879.3	5844
Sight Liabilities:								
2.Central Government	2.1	22.2	50	197.4	34.3	6.1	-2476	-5472
3.Banks	5.1	33.2	126.1	136.4	257.4	847	2099.2	2752.4
4.Other current deposits	5.7	26.9	61.1	328.2	1855	2378	426	5739
5.Payment agreements	6.1	15.8	14	38.7	157.6	113.2	--	733.6
6.Other sight liabilities	0.1	1.0	40.7	29.4	185.3	202.5	251.1	371.5
7.Time Liabilities	2.9	60.2	161.5	129.3	566.3	555.9	1098	1780
8.Capital and reserves	4.7	5.0	17.8	17.5	18.9	19.8	33.8	73.0
9.Other accounts	14.1	87.2	105.8	215.5	338	290.1	626.1	1075.4
10.Total	109.3	383.9	864.4	1515	4266	5719	7938	12898

Source: Bank of Sudan Annual Report 1978, PP.128-129, and 1988,PP.104-105

cancellation of payments agreement in 1987, which added to meagre holdings of foreign currencies and reserves by commercial banks and the central bank as well. Net foreign assets held by the Bank of Sudan in 1988 stood at 0.7% of its budget. (2) lending to the private sector, however, remained low and relatively stable over the 1980s. 3. While currency issue dominates the liabilities side, long-term and temporary advances to the government overshadow the assets side, increasing from Ls 25 million in 1970 to Ls 757 million in 1978, and Ls 5.5 billion in 1988. (4) other accounts also increased in line with other liabilities. It deserves noting that the central bank has substantial participations in the capitals of banks, and other financial institutions, besides large holdings of non-transferable treasury bills, which amounted to Ls 3,122 mn in 1988.

The figures reported in the two tables indicate that advances and overdraft facilities to the government were Ls 11 billion at 1988, reflecting the weak financial position of the country, where currency issue, and borrowing from the banking sector are the major sources of financial support to the public sector. This, coupled with net foreign assets holdings of 0.6% of the central bank's budget as at 1988, and sizeable external deficits, signals the seriousness of the economic difficulties faced by the country, for which urgent solutions should be sought.

In assessing the role of the central bank, it is the success or failure in the bank's pursual of monetary and credit policy to consider. Writing on this issue, Ali (1975) stresses that one faces the bank's own confession of having being passive in the period 1960-70, because it had confined itself to the simple task of expanding or restricting credit depending on whether the economy was booming or troughing (P.149). Be that as it may, the bank's passiveness in policy making and implementation increased since then, and little

Table (4.4.2)

Uses of the Central Bank's Funds in Selected Years: 1970-88 (in Ls mn)

Year	1970	1975	1978	1980	1982	1984	1986	1988
1.Foreign Assets*	8.4	12.1	12.6	32.4	63.9	22.2	156.4	88.7
2.loans	15.2	11.4	3.0	3.0	-	125.0	111.4	111.1
Advances to the government:								
3.Temporary	35.4	33.7	52.6	-	-	-	-	1138.3
4.Long-term, under Section 57	-	122.0	478	1016	1241	1730	1730	1730
5.Under section 57A	25	160.2	226.5	376.8	796	582.3	1656	2724
6.Participation in banks and others	11.3	29.0	36.7	37.9	52.3	78.3	122.6	165.6
7.Treasury Bills	13.0	13.0	13.0	13.0	13.0	1813	2913.0	3122
8.Other accounts	2.9	3.6	42.1	135.4	2136	1358	1248.0	3791
9.Total	109.3	384	864.4	1615	4266	5719	7938.0	12898

Source: As in table (4.4.1) above; Note: * Include foreign currncies, SDRs, and, Gold, and other external holdings.

accomplishments were made.

The basic functions of the bank, as repeatedly outlined in its policy agenda in recent years, are the control of money supply in order to curb inflation, and assure balance of payments equilibrium, and direction of banking facilities to the most productive economic activities. To approach these ends, the bank relies largely on two instruments: credit control and interest rate policy. Be they effective or not, these instruments were mainly intended to circumvent, and rationalize the use of, credit to the private sector, whereas the bulk of increases in money supply was accounted for by the public sector's borrowing from the banking system. And irrespective of the debate over the economic impact of public borrowing, this was associated with a high and escalating rate of inflation, deteriorating balance of payment position, and falling rates of real output growth, particularly between 1978 and 1988- see chapter 3.

The original Bank of Sudan's Act pledges that temporary advances to the government should not exceed 10% of its estimated current revenue and that these loans are repayable within the first sixth months of the following fiscal year (section 57). However, the Act was amended several times to allow increased borrowing by the public sector in order to bridge its current and development budget deficits. In 1975, section 57 was amended, allowing temporary loans to the government to be transferable to long-term debt repayable within ten years. Moreover, advances to finance public projects that have a direct bearing on production, may, after the direction of the President of the Republic, be granted under section (57b). Initially, advances under section 57, to the government and public agencies were not to exceed 15% of estimated current government revenue. In subsequent amendments of the Act, advances to public entities under section 57b are not deductible from the government ceiling.

The Bank of Sudan's Act, as amended up to 1983, renders the statutory limits on lending to the government and public entities indefinable, and the distinction between temporary and long-term advances rather vague. This is the case because long-term loans are not tied to a well-defined category of projects, but subject to the Minister of Finance discretion, while short-term loans, by the virtue of the Act, are transferable into long-term advances. As a result, the net position of the public sector with the central bank deteriorated from an indebtedness of Ls 704 mn in 1978 to Ls 5.6 billion in 1988. In relation to estimated government revenue, this maintained an average of 116% over the same period.

Table (4.5)

Sources of change in Money Supply(MS): 1978-1988 (in Ls mn)

Year	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Change in MS	141	214	182	387	440	975	412	1447	1967	2267	2680
Net Foreign Assets	-26	17	-78	-119	-495	-1350	-44	-282	16.1	-1097	-5098
Domestic Assets:											
1.Net Claims on public sector	141	191	113	278	126	322	-164	264	2411	2555	2625
2.Net Claims on private sector	54	89	119	173	238	494	259	292	504	519	465
Net other claims	-28	-82	28	56	566	1508	361	-1204	-965	-290	-150

Source: Bank of Sudan Annual Reports, various volumes.
Notes: Money supply is broadly defined as M_2, and its components may not add to total because of rounding.

Being unable to control its own lending to the public sector, the central bank was not in the position to restrain borrowing by public entities from the financial sector as a whole, and this added considerably to total domestic borrowing by the public sector. The impact of this on money

supply is patently evident in table (4.5) above, which reveals that public borrowing from the banking sector was the largest source of expansion in liquidity, while net private borrowing was much lower, both in absolute and relative terms. This was particularly the case between 1985 and 1988. However, the persistent rise in liquidity seems to be mitigated by continuous fall in the banking system's net foreign assets.

Aside from the controllability of money supply, the central bank had been marginalized in exchange rate and balance of payments policy-formulation. Exchange rate policy has, often, been drawn by the Minister of Finance without prior studies, or consultation with the Bank of Sudan (Habib, 1984, P.21). Moreover, regarding control over commercial banks, the central bank role as postulated in its Act, has been overruled not only by direct presidential or ministerial intervention, but also by the size, structure and recent legislative developments in the banking system. There are more than 27 banks operating in the country, and these include, commercial banks, development banks, and joint and foreign banks. The supervision of such varied type of banks requires huge human and non-human resources on the part of the central bank, which even if provided may lack the required skills. Again, and most important, the application of the provisions of the central bank's Act, which was drawn on the principles of conventional banking, to Islamic banks was made redundant in several respects. For example, interest rate policy does not apply to Islamic banks, which are not subject to any restriction in their policy toward returns on deposits and loans. Thus, the central bank can exercise effective control over just part of the banking system. Inspite of the Islamization of the entire financial system in 1984, the central bank Act remained untouched. This clearly indicates that the central bank is out of tune with the

developments taking place in the system it is supposed to head.

As a consequence of all these, the central bank's monetary and credit policy over the last decade was either ambiguous in several respects or contradictory with regard to the two sides of the dual banking system; Islamic and conventional banks.

4.4 Commercial Banks:

Inspite of their alleged inaccessibility, commercial banks are the major mobilizers of financial savings in developing countries (Kitchen, 1986, P.120). Sudan is no exception in that commercial banks account for over 80% of total financial savings, and represent the main source of credit to the private sector, and that other financial intermediaries are yet to be well developed. This section studies the activities of commercial banks in Sudan over the period under review. Besides considerations of the impact of monetary and credit policy on banking performance, and examining their sources and uses of funds, we supplement our analysis of the role played by banks with the findings of interviews(8) conducted with senior Officials in a sample of commercial banks.

It might be instructive, first, to note the contribution of commercial banks in the process of financial widening and deepening in the country. The former concept refers to the accessibility of financial services and the spread of banking habits among the public, which depend, largely, on the geographical dispersal of banks. As we have indicated earlier, commercial banks, among other banks, are concentrated in a few urban centres and hardly penetrated rural enclaves; this gives added importance to informal finance in most parts of the country, and for a wide segment of the population. Meanwhile, non-bank financial institutions are much less organized, and hardly known by average

citizens. Financial deepening is concerned with the nature, range and sophistication of financial instruments used and innovations made in the course of attracting funds and extending credit. This will be highlighted throughout the rest of the present section, and in chapter 5.

4.4.1 Deposit Activities of Commercial Banks:

The growth and origin of commercial banks' deposits in selected years over the period 1960-1988 is shown in table (4.6) below. From the time of independence and up to 1966, commercial banks deposits consisted largely of government deposits and deposits made by expatriate and local business firms. After the incorporation of the central bank, government deposits were, gradually, shifted away from commercial banks, to decline from 45% of their total deposits in 1960 to 3.5% in 1966. Since then, the deposit liabilities of commercial banks have been dominated by private deposits, which varied between 83% and 97% of total deposits. Moreover private deposits were also rising, in absolute terms, throughout the period considered, but they recorded exceptionally high rates of growth in some years.

Although the authorities in the central bank tend to attribute deposit changes in relevant years to interest rates adjustment, the relative importance of the interest rate is not straightforward as it also tends to influence banks' credit (see chapter 7). Moreover, although the real rate of interest was positive during the period 1960-75, deposits grew more rapidly in later years when it was either negative or closer to zero. In addition to the rate of interest, changes in deposits may be brought about by variations in output and income, and inflation in particular. The rate of growth of total deposits was notably high in 1985, reaching 75%. In this year, agricultural output, in particular, recovered remarkably after acute drought and widespread crop

Table (4.6)

Growth, and Origin of Commercial Banks Deposits in Selected Years: 1960-1988 (in Ls mn)

Year	Government Deposits		Private Deposits		Total	
	Amount	%	Amount	%	Amount	%change
1960	13.6	44.7	16.9	55.3	30.5	-
1965	2.2	6.2	32.7	93.8	34.9	14.4
1970	2.2	3.9	54.9	96.1	57.1	63.6
1975	6.0	3.5	166.0	96.5	171.9	201.1
1978	23.1	5.4	405.3	94.6	428.4	149.2
1979	19.3	3.5	528.8	96.5	548.1	27.9
1980	25.2	3.5	694.8	96.5	720.0	31.4
1981	34.1	3.6	908.5	96.4	942.6	30.9
1982	34.5	2.6	1306.0	97.4	1339.6	42.5
1983	72.3	4.1	1709.0	95.9	1781.3	32.9
1984	99.5	4.8	1964.1	95.2	2063.6	14.5
1985	341.8	9.8	3280.1	90.2	3622.6	75.5
1986	688.7	17.4	4448.0	82.6	5136.7	41.8
1987	1120.5	15.6	6047.3	84.4	7167.8	39.5
1988	1099.2	12.8	7500.1	87.2	8599.3	20.0

Source: Bank of Sudan Annual Reports 1978, PP.128-129, and 1988, PP.106-107.

failure in 1984. Besides interest rate increases, the rise in deposits in 1985 was attributed to "marked-spread in commercial banks' branches, slackening of business activities in the private sector, and increases in salaries and wages of the public sector employees in that year" (Bank of Sudan Report, 1985, P.61). The slowdown in business activities, together with binding credit ceilings, meant that the increase in deposits was not reflected in the assets side of banks' balance sheet in the form of higher credits, but rather in the form of increased total reserves; total banks' advances stood at just 49% of their total deposits in 1985. On another outlook, it appears that the overall trend of deposits is not significantly influenced by the advent of Islamic banks, and abolition of interest rates. Total

deposits rose by an annual average of 116% between 1970 and 1980, and by 109% during 1980-1988.

Table (4.7)

Analysis of Commercial Banks Deposits in Selected Years: 1960-1988

Year	Current Deposits		Time and Saving Deposits	
	Amount	%	Amount	%
1960	26.1	85.6	4.4	14.4
1965	28.4	81.4	6.5	18.6
1970	43.5	76.2	13.6	23.8
1975	124.3	72.3	47.6	27.7
1978	301.3	70.3	127.4	29.7
1979	402.4	73.4	145.7	26.6
1980	553.3	76.8	166.7	23.2
1981	673.5	71.5	269.0	28.5
1982	909.3	67.9	430.3	32.1
1983	1157.0	64.9	624.4	35.1
1984	1383.0	67.0	680.6	33.0
1985	2754.7	76.0	867.8	24.0
1986	3299.8	64.2	1837.1	35.8
1987	4753.4	66.3	2414.3	33.7
1988	5843.1	67.9	2756.2	32.1

Source: As in table (4.6) above..

The consideration of interest-elasticity of deposits, and their appropriateness for development financing begs their breakdown by type, as displayed in table (4.7) above. This table shows the dominance of checking deposits over time and saving deposits. Nevertheless, time and saving deposits have been rising relative to total deposits; they increased from 14% in 1960 to 24% in 1970 and to 35% in 1983. In contrast,

the share of current deposits was generally falling, but tended to remain stationary over the 1980s, and this was attributable to the strict credit ceiling policy, which discourages commercial banks from accepting interest-bearing deposits. According to interviews with bankers, since the 1983 credit Act, the very acceptance of such deposits was generally based on whether or not the individual bank credit ceiling permits their utilization.

Aside from the composition of their deposits, commercial banks have contributed to a remarkable financialization of savings, which rose from 7.5% of GDP in 1970 to 14.5% in 1980, and 23.3% in 1986. This means that even if banks have not influenced the overall rate of savings in the country, they have helped to transform their structure in a manner that could allow a more productive use of them to be made.

4.4.2 Credit Performance of Commercial Banks:

Table (4.8) below contains data on total advances by commercial banks in selected years over the period 1960-1988, and their nature and allocation among various economic sectors. In line with their deposits, commercial banks' advances maintained a consistent upward trend. But, bank lending is, heavily, geared towards short-term credit, which represented over 80% of total loans between 1960 and 1977, and about 80% over the period 1978-88. This provides an orthodox example of risk-averting, profit-maximizing behaviour of commercial banks in general. Be that as it may, the overwhelming supremacy of short-term loans is expected to be even more pronounced in the context of a country like Sudan, where investment outlets are usually characterized by a good deal of uncertainty (Ali, 1975, P.147).

Medium and long-term loans remained firmly below 15% of total advances granted between 1960 and 1977, but increased considerably over the period 1978-88. This may, partly, be

Table (4.8)

Analysis of Commercial Banks' Advances: 1978-88 (in %)

Year	Short-term Advances					Long-term Advances			Grand Total (Ls mn)
	Exports	Imports	Industry	Others	Subtotal	Capital Investment	Others	Subtotal	
1960-65	44.0	20.0	13.0	9.3	86.3	3.6	11.4	14.0	46.9*
1966-70	45.3	12.7	18.8	9.1	85.9	5.1	9.0	14.1	63.9*
1971-77	35.1	9.1	27.7	15.7	87.6	5.4	6.1	11.5	150.8*
1978	27.3	11.4	31.2	14.9	84.8	11.9	3.3	15.2	343.21
1979	24.1	10.4	29.4	15.5	79.2	17.7	3.1	20.8	460.9
1980	29.8	10.3	28.7	9.2	78.1	19.3	2.6	21.9	592.9
1981	20.8	16.1	29.2	12.5	78.6	17.8	3.5	21.3	777.5
1982	25.1	17.9	23.5	11.3	78.7	16.2	5.0	21.2	1142.5
1983	22.6	17.6	20.1	12.5	72.8	4.1	23.1	27.2	1376.9
1984	22.2	18.5	17.7	13.2	71.8	6.6	21.6	28.2	1609.2
1985	19.3	13.0	21.6	13.9	67.9	8.0	24.1	32.1	1776.7
1986	29.1	6.0	16.1	24.8	75.9	6.1	18.0	24.1	2637.6
1987	50.3	3.5	13.6	11.7	79.1	7.2	13.7	20.9	3792.6
1988	43.6	3.7	15.7	16.2	79.2	8.6	12.2	20.8	4504.9

Source: Bank of Sudan Annual Reports: 1978, PP.132-133, and 1988, PP.108-109.
Note: * Figure stand for annual average over the relevant period.

ascribed to the incorporation of Islamic banks, which, by virtue of the nature of their deposits, are supposed to be investment-oriented, and, partly, to credit policy, which, since 1983, has become more specific about the nature and sectoral distribution of banks' advances.

A classification of short-term loans shows that the main activity financed by commercial banks is export, whose percentage share in total credit has been increasing over time. This reflects the central bank's credit policy, which encourages the financing of exports and related activities, and, meanwhile, disfavours credit for imports, which showed a continuous downward trend. Moreover, and, perhaps, as a result of the central directives by the central bank, the financing of working capital in industry has also been rising over most of the period, but started to decline since the mid 1980s. This reflects the deteriorating investment environment and marked slowdown in economic activity in general, over that period, as a consequence of high and accelerating rates of inflation, political instability, and acute shortages of foreign exchange. Advances to agriculture are a negligible average of 1% over the whole period, and this is hardly justifiable, provided the predominance of the agricultural sector in Sudan's economy.

The percentage share of medium and long-term loans, though increased considerably in the early 1980s, started to decline since then. Moreover, only about 20% of these loans granted over the period 1978-88 went to the sphere of fixed capital formation, which also sharply declined between 1983-88. Again this, probably, expresses the worsening investment environment. Nevertheless, the contribution of banks to real capital formation is less than expected, given their financial expertise and investment knowledge.

Thus, it seems that banks have rigidly adhered to the golden rule of banking, i.e. short-term deposits should only

be used to finance short-term loans. Meanwhile, it is exactly long-term lending, equity investment, and close involvement in all activities of client-companies that appear to fulfill functions that are desperately required by private firms in developing countries (Kitchen, 1986, P.121). As kitchen adds, firms often have difficulty in raising equity, and cannot hire skills in the market because of managerial incompetence.

To further assess the performance of commercial banks in Sudan, we examine below their efficiency in mobilizing resources, in conjunction with the constraints inflicted on them by monetary and credit policy.

Table (4.9) below summarizes the average resource-cost, and the loan-deposit ratio of commercial banks as well as average annual returns paid by them on profit-sharing deposits during 1983-88. Over this period, banks were liberalized in the sense that they were free to determine both the deposit and lending rates. But, they were restrained by qualitative and quantitative credit controls. It is apparent from the table that the average total cost of banks per unit of saving mobilized is very low and stable. However, the corresponding loan-deposit ratio, as influenced considerably by credit ceilings, is also low, averaging 58%. This means that only about two-thirds of total bank deposits were actively utilized, and since they cannot fully employ their existing deposits banks have no, or little incentive to raise more, particularly interest-bearing, deposits. This expectedly inhibited competition amongst them, as manifested in the negative real returns on deposit paid by banks, without intervention by monetary authorities. The nominal deposit rate on saving and time or investment deposit averaged 8.3%, while the rate of inflation averaged 35% for the same period. Ironically, though banks were free to determine this rate, its actual level over the period 1983-1988 was lower than that previously fixed by the central bank.

Table (4.9)

Average Resource Cost, Returns on deposits, and Loan-Deposit Ratios of Commercial Banks, 1983-88 (in %)

Year	1983	1984	1985	1986	1987	1988
Average Resource Cost*	5	5	5	4	5	n.a
Return on interest-bearing deposits*	8.5	10.4	9.8	7.4	7.1	7.0
loan-deposit ratio**	64	78	49	51	53	52

Source: Bank of Sudan and commercial banks' Annual Reports, various issues.

Notes: * Calculated for four commercial banks, which are among the five largest banks in Sudan. ** Calculated for all commercial banks from table (4.7) and (4.8) above. Cost include general and administrative expenses plus depreciation and bad debt allowances. The loan-deposit ratio is based on the value of total credits and deposits.

4.4.3 Findings of Interviews on the Nature, and Determinants of Commercial Banks' Operations, and Prospective Role:

It has been argued in chapter 1 that financial intermediation may favourably affect the pace of economic growth by: (1) increasing the volume and improving the composition of savings; (2) raising the amount and efficiency of investment; and (3) promoting entrepreneurial skills, and providing financial guidance for economic enterprises. Having examined the performance of commercial banks in terms of the first two elements, with reference to monetary and credit policies, we consider below the views of senior Bankers on the determinants of the expansion of banking services, deposit mobilization and credit allocation. In addition, the interviews regard the role of banks in promoting entrepreneurial skills, exploring investment opportunities, and undertaking other functions, which they are expected to

fulfill in a developing country. It should be noted that bankers' views are helpful in explaining certain institutional and other factors affecting banks' behavior, but they do not represent a firm ground for our evaluation of the performance of these banks.

The interviews and specific bank studies covered eight commercial banks, whose holdings amounted to about 60% of total commercial banks' assets in 1987. This group of banks consists of four Islamic banks, and three conventional banks, which have, recently, been compelled to switch, partly, to Islamic modes of finance, and one foreign bank. The differences between the first two categories of banks in terms of their deposits, lending and other strategies are explored in the following chapter. The eight banks have a total of 161 branches. All respondents hold university degrees in economics or finance.

On the basis of net benefits from expanding their banking services, and regarding the potential for growth, only one informant considers the present size of his bank as optimal, 3 as reasonable, and 2 as sub-optimal. Of these, six pointed out to the central bank's policy, such as allocation of licenses for new branches and restrictions on banks' capital and reserves, as the limiting factor, while the rest believe that lack of managerial cadre, caused by out-migration, is the binding constraint. But, they all agree that credit ceiling is largely responsible for lack of ambition on part of banks to expand their services.

Inspite of high and unstable inflation, and falling real incomes, respondents generally believe that there is a considerable scope for increased savings to be mobilized. But, because of credit ceilings, and the need to reduce operational costs, banks sometimes have to set a large sum as a minimum requirement for opening current accounts. Moreover, since only part of total deposits may be profitably invested,

half of the interviewees admitted that their banks, at a time, had to turn away customers wishing to open profit-bearing accounts. Such a policy is quite justifiable since banks, within the ceiling, can rely on current deposits only to make short-term credit and maximize their profits - the height of the ceiling is not affected by the composition of deposits (see section 4.6.2).

Only two respondents believe that profits paid on time and saving deposits may have a positive impact on their growth. The rest argue that people save for certain targets, and not for income-earning purposes. This, however, does not rule out the possibility that substantially high rates of interest or profits on deposits may, at least, induce a change in the composition of total deposits in favour of those that earn income.

Bankers hold the view that exchange rate instability, and high black market rates relative to the fixed official rate, adversely affected the growth of deposits in foreign currencies, as well as foreign participation in banks' equity. This has also repressed the flow of remittance by Sudanese Nationals Working Abroad (SNWA) through official channels, though other factors such as inconvenience of banks compared to other channels also matter. Banks are accustomed to send officials abroad in order to create an awareness among SNWA of the facilities they provide to customers when remitting their savings through them or holding these savings in foreign exchange accounts.

The findings reported above suggest that the size of the financial market as a whole is not optimal, yet there is no strong reason for banks to compete among themselves. Only two banks offer special services, in the form of easy overdraft facilities, not to attract new customers, but to keep their established depositors/borrowers.

With regard to bank lending it is, however, rather

unrealistic to expect banks to allocate their resources according to a social or even economic criteria. Bank lending, within the ceiling and apart from the policy-determined direction, is dominated by profitability or financial gain and liquidity considerations, irrespective of the type of activities being financed, or regional imbalances. These considerations, coupled with highly unpredictable investment environment, necessarily imply bias towards short-term credit. But, it deserves noting that two banks have special funds for projects with strong social impacts, and two government-controlled banks claim that they carefully follow the central bank policy, including moral suasion. Half of the banks considered have special lending policies towards real capital formation in agriculture, and industry, two in transport and financial companies, but they all participate in the capital of commercial establishments, and disallowed to finance estate and construction. Advances to producers in the traditional subsector are perceived by 5/8 to be inferior in terms of their risk and return characteristics. The rest, government-controlled banks, are not involved in this sector because it is left to special purpose banks. But, two banks are reasonably committed to the financing of development projects in rural areas through direct participation *(Musharakah)*.

One of the eight banks studied provides only short-term credit, for which feasibility studies are rarely required, and seldom carries out an independent assessment of the borrower's project, but always commands accounting statements, collaterals and other confidential information on the borrower's financial position. For the rest of banks, all the above mentioned documents are always required in support of applications for medium and long-term credit. But, in the case of short-term credit no feasibility study is required, and established borrowers need to meet very limited

requirements, while new borrowers have to present all types of documents. This suggests another reason for banks to concentrate on short-term lending, and lends support to Stiglitz and Weiss (1983) argument that endogenous constraints such as imperfect information may bias the allocation of credit towards established and safe borrowers even if banks are free in their lending and interest rate policies.

Again, it is too early to expect banks to actively promote the development of entrepreneurial skills, though some hopes are raised by Islamic banks. Only two banks have been reasonably involved in exploring lending opportunities, by conducting feasibility studies and creating an awareness among investors about potentially profitable projects in agriculture, industry, transport and commerce. These and a third bank also provide technical and/or managerial assistance to investors. They normally appoint specialists to study and/or supervise projects, and the type of assistance provided ranges from technical aspects, accounting systems, and managerial organization to marketing strategies.

While banks, so far, seem not to have done enough to aid the course of economic development within the freedom they are allowed, interviewees tend to blame the deteriorating economic conditions[9] in general and government policies in particular for their limited role. Even after the 1972 de-nationalization Act, commercial banks remained under the firm control of the government. But, banking control was relatively relaxed between 1975 and 1983. From then onward, though private banks flourished and interest rates abolished, credit policy became strict and rigid as well. Now banks are free to set deposit and lending rates on a basis of their own choice, and they are even allowed to opt out of a compensatory interest rate proposal (see section 4.6.5 below). But, most banks (7/8) consider credit ceiling as a

serious constraint on their activities, while they all concede that selective credit policy is acceptable, with the qualification that it is not the sector as such that matters, but the type of activity financed within the priority sector. Moreover, with tight credit ceilings, the reserve requirement ratio of 18% in 1988 is viewed by bankers as meaningless.

Continuous exchange rate depreciation is considered by 6/8 of respondents to be detrimental to their external dealings, investment activities, and long-term contracts in general. If banks are to be induced to finance development projects, the central bank should maintain a relatively stable exchange rate for investment purposes or otherwise bear all the losses to investors and their financiers, resulting from exchange rate adjustments. It is also believed that free foreign exchange markets, as being allowed to exist in the late 1970s and early 1980s, are not in the interest of formal institutions and development activities, as these cannot compete with the underground economy for the meagre foreign exchanges. However, it deserves noting that two banks, which have limited foreign relations, hold the opinion that foreign exchanges are not the binding constraint on investment activities, and that banks can still play a more profound role in stimulating investment activities. Provided a reasonable investment environment and well studied projects, the import-contents of investment may be financed through private, foreign or domestic, participation or by SNWA.

Finally, the profit tax policy at the rate of 70% in 1988 is considered by the government-controlled banks as reasonable in the direction of supporting the public sector, but reckoned by private banks to be lavish, discouraging the growth of their assets, depressing dividends, and inhibiting the growth of banks.

To close this section, it seems that commercial banks have mobilized considerable amounts of savings, but, the

application of which has been rather inappropriate from the country's development needs viewpoint. Meanwhile, banks have been severely repressed by credit policy, rather than interest rate policy, in recent years. Yet, it is not clear that they could have done better had they been more liberal, since despite the considerable freedom they enjoyed in the late 1970s and early 1980s, there was no notable change in their behaviour. Commercial banks have played a relatively insignificant role in promoting entrepreneurial skills, and initiating investment activities. But there are signs that they could do better in the future, if a healthy economic environment exists.

4.5 The Operations of Development Banks and the Post Office Savings Bank:

4.5.1 Development Banks:

Along with many other developing countries, Sudan has established four development banks, which are specialized in the type of the lending functions they perform. These banks[10] were initiated, and have been largely supported, by the government, to provide funds for development projects in agriculture, industry, and estate as well as other sectors.

The Agricultural Bank of Sudan was established in 1959, with an authorized capital of Ls 7 mn, which was fully paid by the government and the Bank of Sudan. The objectives of the bank are: (1) to provide credit to small and medium size farmers and agricultural co-operatives and (2) to take the initiatives to modernize the agricultural sector and enhance its productivity. To create a sense of commitment, borrowers are required to contribute a minimum of 30% to the funds required for any project, and to ease access to credit, the bank accepts as collaterals moveable property and crop guarantees in the case of short-term loans, whereas real

estate security is needed in the case of long-term loans.

However, the bank's sources of funds, which consist of its capital and borrowing from other financial institutions, are rather inadequate for its lending strategies. Its paid-up capital increased to Ls 50 mn by 1986, and Ls 80 mn by 1988/89. As a result, and by virtue of the operations it finances, the bank has concentrated on short-term lending, which claimed over 70% of its total advances between 1980 and 1988. Moreover, because of inflation, escalating costs of investment projects, and lack of foreign exchanges, the bank abandoned long-term lending altogether during the same period. Nevertheless, the total advances granted by the bank, which amounted to Ls 110 mn in 1988, are comparable to those made by major commercial banks in the sphere of agriculture, with the advantage that its advances are relatively well distributed throughout the country.

But, the bank has encountered many problems in attaining its objectives. These, besides the inadequacy of its capital, include lack of organization and awareness among its target groups (peasants and farmers), and unpredictability of rain-fed agricultural output. The latter problem, together with poor infrastructure and transport facilities, makes crop marketing quite risky and costly as well.

The Industrial Bank of Sudan was found in 1961 to assist and promote the establishment and modernization of public and private industrial enterprises, and to encourage external participation in industry in Sudan. Its authorized capital was Ls 3 mn in 1961, and increased to Ls 23 mn by 1987. The bank provides medium and long-term loans, and can contribute by up to 2/3 of the capital of any industrial enterprise. Because of its thin capital position, the bank makes quite moderate industrial advances, which stood at Ls 2.3 mn in 1986, and Ls 12.4 mn in 1988. However, the bank helps mobilizing funds from outside the financial system, or

assists in the utilization of funds that are short of the capital requirements of investors. For example, in 1987 the bank granted 29 loan for a total of Ls 13.7 mn, and this enabled a total investment of Ls 56.8 mn to be undertaken, creating 381 jobs. Moreover, the bank's advances are relatively well spread over the country, and it provides some technical and administrative services to its customers.

In 1967, the Sudanese Estate Bank commenced operations with the objectives of undertaking housing researches, and providing credit to low and medium income groups, for the construction of urban dwellings. The bank accustomed to charge low rates of interest on medium and long-term loans. During the 1970s, it had granted an annual average of 1200 loan for Ls 2.2 mn per year. But, the bank's capital, which remained at Ls 15 mn since 1983, proved to be extremely inadequate. Accordingly, its advances dropped to just Ls 1.3 mn in 1984, and Ls 1.2 mn in 1987. Its deposits, on the other hand, have virtually dried-up after the abolition of interest rates without a suitable alternative to reward depositors(11), and with that its lending has also almost come to a halt in recent years.

In contrast to the experience of the above specialized banks, the Sudanese Savings Bank, which was established in 1974, has been quite successful. The bank was initiated by the government in the Central Region as a pilot project, with the objective of extending banking facilities to rural areas, and accelerating development there by means of specialized local finance. More specifically, the bank was originally intended to promote the growth of financial savings by tenants and farmers, which can then be utilized to finance local small and medium size projects. However, the bank has come to depend largely on checking deposits, and sizeable commercial advances in recent years.

The Sudanese Saving Bank is characterised by its huge

number of customers, which increased from 19 thousand in 1978 to 121 thousand by 1988. It spends considerably in spreading banking habits among the public, as well as on evaluating numerous small projects. To undertake these functions over a wide area, the bank uses mobile banking and research units.

Table (4.10)

Classification of Credit by the Sudanese Savings Bank: 1980-1988 (in Ls Million)

Credit Type	1980	1981	1982	1983	1984	1985	1986	1987	1988
Industry	1.1	2.0	2.2	2.9	3.2	6.6	6.7	6.8	15.3
Agriculture	1.1	0.8	0.9	1.4	5.0	14.7	21.3	21.1	85.5
Commerce	2.9	6.1	9.6	11.3	16.8	28.3	42.6	50.0	61.5
Handicraft, transport and housing	1.0	2.3	3.6	3.8	5.6	11.2	3.7	14.5	32.8
Others*	1.0	1.12	0.4	2.8	3.0	4.3	14.1	10.0	22.1
Total	8.0	14.0	20.2	25.6	38.3	69.2	96.6	114	232

Source: The Economic Survey 1988/89, P.174.
Notes: * Includes professional and staff loans.

The bank's total deposits rose from Ls 10.3 mn in 1980 to Ls 415 mn in 1988. But, this increase was accompanied by a marked change in the composition of deposits in favour of current accounts as against saving and investment deposits. The share of the former appreciated from about 50% of total deposits in 1980 to 70% in 1987. Analysis of the bank's advances (table 4.10 above) shows that they are well distributed amongst various economic sectors, and that the bank has provided funds for agriculture, industry and housing far in excess of those jointly provided by other specialized banks. Commercial lending amounted to about 50% of the bank's total advances in 1988, and this was ascribed to the lack of profitable investment avenues in the targeted sectors and

areas. Although the bank is subject to the central bank's credit policy, its loan-deposit ratio is far above that of commercial banks as a whole, besides its contribution to real capital formation, particularly in transport, small and medium scale industries and agriculture, compares favourably with that of commercial banks as a group.

The size and nature of the Sudanese Savings Bank's activities indicate its efficiency as a semi-private institution as against the fully government-controlled banks, and its development-orientation as compared to the privately-run commercial banks.

4.5.2 The Post Office Savings Bank (POSB):

The POSB is, in fact, the first institution involved in banking business in Sudan. It has commenced operations in 1913 under the administration of Mail and Telecommunication authorities. The bank is characterised by its low resource cost, and active promotion of savings habits through Post offices, which cover the whole country. It does not undertake investment on its own, and instead it supports the government budget with the savings generated for a fixed rate of interest.

As table (4.11) below may attest, the POSB's deposits are sizeable, reaching Ls 38.4 mn in 1988, but has, in recent years, increased at quite modest rates relative to those of commercial banks. This is not surprising in view of the problem the bank has faced after the abolition of fixed interest rates in 1984. The bank used to grant loans to the government, and public agencies at certain rates of interest, and, in turn, it pays depositors a reasonable interest rate. After the 1984 Islamization policy, the bank is still devoted to serving the government by extending loans, which may not be invested in particular projects, with specific returns. Hence, on Islamic basis, it is not possible to determine the

rate of profit/loss payable to customers, while the bank receives no returns on its interest-free loans to the government. This seriously threatens its position, with the only remaining incentive for depositors that the nominal value of deposits is fully guaranteed by the government and that deposits are tax-free.

Table (4.11)

The Post Office Savings bank Deposits: 1980-1988(in Ls mn)

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988
Government	3.0	2.9	2.8	2.7	2.9	3.1	3.1	2.7	3.4
Private*	16.6	18.0	21.7	22.0	27.0	27.3	31.9	34.6	35
Total	19.5	20.9	24.5	24.7	29.9	30.4	35.0	37.3	38.4

Source: The Economic Survey 1988/89, P.178.
Notes: * Includes deposits by private savers, public trustees, and insurance companies.

The case of the POSB provides another example of the adverse effects on financial intermediation as a consequence of the abolition of interest-bearing instruments, without their replacement by sufficient and acceptable interest-free financial instruments.

4.6 Monetary and Credit Policy:

This section analyses the monetary and credit policies adopted by the Sudanese authorities, over the period considered, in the pursuit of achieving, in particular, certain stabilization and growth objectives. Monetary and credit policies necessarily involve measures that influence the financial sector, which is, often, viewed in LDCs, as a means of effecting economic activity in general. The economic priorities stated in a particular set of monetary and credit policies may, therefore, form a framework for evaluating the performance of the financial system when it is effectively

regulated.

In Sudan, the menu of monetary and credit policy[12] objectives consists basically of full employment, price stability, economic growth and balance of payments equilibrium; but, the domain of these policies, particularly in the late 1970s and throughout the 1980s period, was price stabilization and growth. These objectives, however, may not be complementary. For instance, while stabilization requires containment of bank credit, growth requires increased mobilization and efficient utilization of financial savings.

The emphasis and tightness of monetary and credit policies have changed over time, from loosely stated objectives and lax control in the 1960s to comprehensive regulation during the 1980s. But, these policies have up-to-date relied on a few instruments; mainly manipulation of nominal interest rates, and qualitative and quantitative credit control. Other instruments such as variation in cash reserve ratios of commercial banks, and cash margins on certain loans and bills have also been applied, but only recently.

The stabilization question was not a prime objective during the 1960s, and up to the late 1970s, because of moderate rates of inflation. For fears of inflationary pressures that might result from rapid growth in bank lending, credit policy aimed, over most of that period, at restraining public and private borrowing, but no firm measures were applied. With increasing balance of payments deficits as from the late 1970s, credit policy towards the private sector became more strict. Ceilings on credit to importers were set up, while banks were encouraged to increase their lending to the export sector.

In the 1980s, both stabilization and growth problems were pressing, because of high and rising rates of inflation and acute shortage of funds for development projects, as foreign capital was hardly obtainable. The pillars of the monetary

and credit policies, which were thus designed to stabilize the economy and enhance its growth, were interest rate manipulation, credit control, and exchange rate adjustment. By and large, credit control was considered by monetary authorities as the most important instrument, while other instruments such as open market operations were discarded as inefficient.

A drastic policy change, which has, perhaps, affected the effectiveness of these policies, occurred in 1984 when the entire financial sector was required to comply with Islamic principles of finance. These principles were narrowly defined in terms of abolition of predetermined deposit and lending rates of interest(13). The rest of this section discusses the instruments used as well as these policy changes, and critically assesses the stabilization and growth content of monetary and credit policies adopted in Sudan in recent years.

4.6.1 Interest Rate Policy:

Prior to 1984 all nominal rates of interest in Sudan were determined by the central bank. But, they were not considered to be effective policy instruments, and thus rarely changed. For instance, throughout the 1970s, the structure of nominal interest rates was amended twice, and by no more than two percentage points(14). Until the late 1970s, nominal interest rates and the inflation rate were not substantially different, so that real rates of interest remained on the average above zero.

The reasons behind interest rate fixing are not difficult to deduct. First, the government as the largest single beneficiary from bank lending has a strong incentive to keep the cost of its borrowing down. Second, low interest rates together with selective credit control are perceived as a means of curtailing inflation and increasing output through

subsidized capital inputs. Finally, it is interesting to note that the policy of fixing deposit and lending rates was said to be intended to prevent undesirable competition among commercial banks in particular(15). The policy document was ambiguous about how this works. But, since the banking sector was dominated by government-controlled banks, it is indicative that that was meant to discourage private banks, and to ensure that financial resources are cheaply available to the government and public agencies. Nevertheless, despite the policy of fixed interest rates, the banking sector enjoyed some degree of freedom, especially with regard to credit allocation. Lees and Brooks (1977) wrote:

> "It is difficult to find the extremes of overly tight (financial repression) monetary policy or inflationary development finance in Sudan (P.85)"

This is evident in table (4.12) below, which displays nominal interest rates and the rate of inflation, as measured by the Consumer Price Index (CPI), over the period 1960-1987. Prior to 1973, the real deposit rate was slightly positive, averaging 2% annually, whereas the real lending rate averaged 6.9%.

In contrast, during the late 1970s and the early 1980s, though the structure of nominal interest rates was adjusted twice, the real rates were falling increasingly below zero as the rate of inflation was high and accelerating. However, the impact of the interest rate policy on the financial sector over this period was likely to be minimal, because the many Islamic banks, that have began to appear since 1978, are not subject to it. Moreover, the non-bank financial intermediaries are neither under the direct control of the central bank, nor being directly influenced by the interest rate or credit policy.

Table (4.12)

Nominal Interest rate Structure and the rate of Inflation: 1960-1988(Annual %)

Year	Pre-1966	1966	1973	1975	1981	1983	1987
Commercial banks							
Lending Rate	8	10	12	14	18	21	27*
Deposits Rate	2	4	6	8	12	15	24
Treasury bills rat	4	6	7	9	13	16	-
Post Office Deposits Rate	2	4	6	8	10	13	20
The discount rate	4	6	7	9	13	16	_
Inflation Rate**	3	1	5.1	22	19.5	34.1	27.1

Source: Bank of Sudan Annual Reports, various issues.
Notes: * Not binding, and to be charged on loans to sectors other than agriculture, and industry for which the relevant rate was 24%. ** The average rate of inflation over the period during which the rate of interest remained the same.

4.6.2 Credit Policy: The Fight Against Inflation and Struggle for Growth:

Restrictions on the size and direction of credit have been the most important instrument of monetary control, especially during the last decade. This was partly due to lack of well structured money and capital markets, which renders indirect methods of monetary control relatively ineffective. Credit policy in Sudan contained two types of direct credit control.

1. Quantitative Credit Control:

This type of control consists of direct ceilings on overall banks' advances, under which limits on individual bank's credit are also determined on annual basis. The sole objective of such credit policy is to reduce the supply of money in the hope of fighting inflation. The overall credit ceiling, is based on the following criteria(16): (1) the position of the national economy, and the general direction

of fiscal, monetary and commercial activities; (2) balance of payments position, and the expected changes in the quantity and prices of exports and imports; (3) credit performance of the banking system in the past year as it relates to changes in money supply; and (3) envisaged demand for credit by the private sector; the willingness and ability of banks to make credit is assumed to be unlimited.

The ceiling imposed on lending by individual banks is based on bank's credit-resource ratio, and cash-reserve ratio; where credit equals the sum of total advances and investment in the shares of domestic companies. Resources include total deposits, paid-up capital, reserves, and margins on letters of credit; reserves being equal to current account balances with the central bank. Additional criteria include conformity of the bank with the central bank's directives, and the extent to which it is involved in the financing of priority sectors over and above the minimum level set by the central bank. With the Islamization of banks, another criterion was introduced, that is the methods of lending used by the bank.

In the light of these considerations, the credit-liabilities ratio of commercial banks was kept within the limits of 0.5 and 0.7 during the last decade. However, the criteria for credit ceiling appear to be concerned with the application of funds, irrespective of their nature and supply constraints. For example, they fail to discriminate among various types of deposits, which could give rise to certain uses of funds.

2. Qualitative Credit Control:

While quantitative credit control is meant to curb inflation, qualitative control is intended to enhance economic growth by means of channelling credit to relatively more productive sectors and related activities. The priority sectors encompassed the export sector, agriculture, industry and transport, for which medium and long-term loans were

particularly encouraged to finance working capital as well as fixed capital. The type of finance emphasized is generally referred to as development finance. Because of mounting need for such finance, selective credit policy, which took the form of advice throughout the period up to the mid 1970s, has become progressively more comprehensive and specific. In the late 1970s, and as part of a stabilization programme inspired by the International Monetary Fund, strict ceilings as well as selective credit policies were introduced. Private commercial banks were directed to extend at least 10% of their total advances in the form of development loans.

From 1986 onward, the selective credit policy(17) was further tightened, giving private commercial banks clear instructions to distribute their advances under the ceiling as follows: 30% to the export sector; 25% to working capital in industry; 35% in the form of development, or medium and long-term, loans; and the maximum of 10% to local trade and other types of lending. But, the government-controlled banks were allowed to direct up to 45% of their credit ceilings to the finance of local trade. Moreover, banks have been repeatedly asked by the central bank to pay particular attention to disadvantaged regions within the country in making their credit policies. And to reduce the risk inherent in regional credits, consortium financing was encouraged.

Commercial banks, however, are not obliged to utilize their total credit ceiling, but disallowed to exceed it on sectoral basis. The trend of credit policy mentioned above is an indication that the performance of banks was not satisfactory. But, as we will argue below the appropriateness of these policies is not unquestionable.

4.6.3 Reserve Requirements Policy:

Reserves used to be held with the central bank mainly for liquidity purposes. Only in recent years that the legal

reserves-deposits ratio has been considered as an active instrument of monetary control. Thus, while the reserve requirement ratio remained below 10% throughout the 1960s and 1970s, it was raised to 10% in 1983, 12.5% in 1985, and 18% in 1988. Yet, with effective credit ceiling the reserve ratio is in practice redundant.

4.6.4 Other instruments of credit policy:

Instruments of indirect monetary control such as Open Market Operations (OMO) and the discount rate, which work through the reserve money side are virtually redundant. For OMO to be undertaken there needs to exist a relatively well organized financial and capital market. In Sudan, there are limited securities for the central bank to use, and secondary financial markets are yet to be conceived. Further, the bank rate was hardly used, since commercial banks suffer from excess liquidity rather than the reverse, and with the advent of Islamic banking the discount rate is made illegal.

Under these circumstances, monetary authorities have frequently referred to additional methods of direct monetary control. These included prohibition of inter-bank lending; forbiddance of foreign banks from taking deposits except from their approved clients; and strict licensing policy for new banks' branches. In 1988, credit policy gave top priority to circumventing commercial loans, because banks were believed to be excessively involved in storage of consumer goods, and helping traders to drive prices upward in order to generate monopoly profits. Banks are accordingly banned from financing 22 consumer commodities, and from refinancing of trade altogether.

The direct methods of monetary control have been extensively applied not only because the indirect ones are ineffective, but also because it is believed that banks are entirely profit-minded, and unless policed would undermine

the underlying social and economic priorities of the nation. In fact commercial banks were accused of triggering malpractice, corruption, and monopoly, and in response two special separate committees[18] were formed in 1976 and 1985 to investigate corruption within the banking sector. Be that as it may, the second committee was dissolved after two years of politically sensitive investigations, and non of the two reports is ever made public.

4.6.5 Islamization and Experimentation with Compensatory Rates of Interest:

Following radical political changes in Sudan, and its decoration as an Islamic state in September 1983, the central bank issued a brief circular[19] to all commercial banks instructing them to switch immediately to Islamic modes of finance. Fixed interest rates were made illegal and replaced by a profit-and-loss sharing system in both deposits and lending activities. And banks were given the right to levy charges on current accounts in order to cover their administrative expenses. But, foreign dealings were to continue according to previous arrangements until a further notice, which never happened.

Commercial banks started transferring savings and time deposits into investment or non-interest-bearing accounts. On the assets side three main instruments were introduced: (1) *Mudarabah*, which is a financial arrangement in which the bank provides all the financial capital and the borrower caters for the human capital needed for a particular project; (2) *Musharakah* or participation arrangement in which the bank provides part of the financial capital required for investment; and (3) *Murabahah*, which is a form of deferred payment sale, in which the bank supplies borrowers with goods, whose value is repayable in the future at an agreed price and a mark-up. *Musharakah* is an instrument of short-

term lending. In all three types of arrangement, the bank, according to a negotiated formula, gets part of the profit or loss realized by the borrower, and in turn, shares that profit/loss with its depositors. Thus fixed and guaranteed returns on financial assets are theoretically discarded.

However, in 1987 the central bank felt that the Islamic instruments available to banks were rather inefficient or unsuitable for all banking operations. Accordingly, a compensatory rate of interest scheme(20), in which the minimum deposit and lending rates were set close to the annual rate of inflation, was introduced. But, banks were given the right not to comply with that scheme if they are not entirely satisfied that it is not in conflict with Islamic principles. The central bank justifies the compensatory rates of interest in that a real rate of interest which is not significantly different from zero is acceptable in Islam, and that the use of these rates will enhance the growth of financial intermediation by allowing the use of both conventional and Islamic banking instruments. The scheme stipulated nominal deposit and lending rates at 24% and 27% respectively. Expectedly, this policy was rejected by all banks, except some of the government-controlled ones, for two reasons: Firstly, because compensatory interest rates are no more than a new name for predetermined interest rates; and secondly, and foremost, because these rates are too high; provided the tight credit ceiling, banks will be bound to pay high interest rates on deposits that they can only use part of them. Eventually, banks have continued to use policies of their own choice, and the central bank has lost control over deposit and lending rates. But, conventional banking is allowed to exist alongside Islamic banking.

It emerges from the foregoing discussion that the monetary and credit policies executed in the 1980s, were rather ineffectual. The cornerstones of these policies were the

control of money supply in pursuit of curbing inflation, and the enhancement of the rate of economic growth via an improved allocation of credit. It has already been demonstrated that the central bank was less successful in its attempts at controlling money supply, because this was mainly caused by changes in the monetary base, which responds passively to public sector borrowing requirements. On the other hand, it may also prove difficult to control the money multiplier. Even if the central bank effectively carries out its credit policy, commercial banks still have incentives to exceed the ceilings on their advances. According to the central bank Act, any bank that exceeds the ceiling may be required to pay an interest to the central bank at 5% above the prevailing rate of interest. Provided the interest rate structure in table (4.12), the penalty rate will still be lower than the opportunity cost or the rate of inflation. Therefore, banks may exceed the fixed ceiling and if failed to conceal that pay the penalty rate and still make profits.

Furthermore, most of the holding or speculative companies were established as part of a group that includes a leading commercial bank, and they are, in one way or another, engaged in banking business, particularly in the sphere of lending. Thus, they can help banks to siphon off, at least part of, their excess liquidity.

Regarding their development content, the monetary and credit policies executed during the 1980s seem to be self-defeating, as they discourage the growth of financial intermediation in general and financial deepening in particular. The emphasis placed on development finance should, logically, be accompanied by a commitment to stimulate the growth of relatively stable financial assets, such as investment and time and savings deposits. These types of deposit are traditionally more prone to risk-taking, and at the same time provide the basis for development finance

according to the profit-and-loss sharing system. Yet, the formula for credit ceiling discourages banks from accepting interest-bearing or profit-sharing deposits, irrespective of how high or low the money rate is. This was the case, because within the credit ceiling banks can rely on checking deposits and earn a risk-less commission income, or profit from short-term lending, whilst accepting interest-bearing deposits that may not be utilized would only add to increased costs. Thus, as profit-seeking and security-minded capital institutions, banks have no incentive to mobilize investment and time and savings deposits over the fixed ceiling, except that this may help them to secure some increases in their ceilings in subsequent years.

In view of this adverse effect, and since interest-bearing deposits in general and investment[21] deposits in particular are less active component of the money supply, the credit ceiling policy should be linked to the relative share of various types of deposits, rather than total deposits as such. A sensible credit policy would either fully exempt investment and time and saving deposits from the ceiling or make the ceiling progressively widening with increases in their share in total deposits. This may raise the volume of resources that can be used for real capital formation, and curtail short-term lending, which is more inflationary.

4.7 Summary, and Concluding Remarks:

The objective of this chapter has been to analyse the role of banks in economic development in Sudan vis-a-vis savings mobilization and investment financing. Starting with the financial and banking structure, it appears that, despite its long experience, the Sudanese financial system remained underdeveloped and traditional as the operations and dominance of commercial banks, the relative unimportance of non-bank financial intermediaries, and absence of capital

markets may testify.

The financial system, however, underwent a series of ill-studied changes, such as the nationalization and Islamization. Though the financial sector had enjoyed some degree of freedom in its operations, it was also subjected to various types of credit and interest rate controls.

But, banks, along with foreign trade and the rate of exchange were liberalized in the late 1970s and early 1980s. Yet, the behaviour of banks showed no distinct change in response to these developments. Unfortunately, the credit and banking policies reviewed in this chapter can, hardly, form part of a well-defined and integrated stabilization and development strategy, and thus it is not easy to isolate the impact of exogenous factors on the banking sector, from those endogenous to it.

However, the banking sector, though less evenly dispersed over the country, has contributed to a rapid growth in financial savings, and monetization of the economy. Had this trend been, favourably, augmented it could have led banks to play a more profound role in the process of economic development in the country.

In examining the performance of various types of banks, it was clear that the central bank has been overshadowed by the political will, at the levels of both policy making and implementation. The bank failed to control currency issue, which became a function of public borrowing. As such the attempts by the bank at shaping banking activities in a way conducive to stabilization and growth have been disappointing.

Commercial banks in particular have generated sizeable deposits relative to GDP, the composition of which, though changed over time, has always been heavily weighted by non-interest-bearing deposits. There, however, seems to be a considerable room for more savings to be mobilized, if credit

ceilings are relaxed. This conclusion appears to be in conflict with our discussion of domestic saving rates, which were found in the previous chapter to be poor. But, as we have already indicated there, the private savings rate was high relative to that of the public sector, and adding this to remittance by SNWA, the overall private savings rate may well be in tune with the trends in banks' deposits.

The application of commercial banks resources has been rather inappropriate from an economic development standpoint. It has been excessively geared towards short-term lending, with inadequate attention to real capital formation. This was the case when positive and relatively high real rates of interest were prevailing and banks were relatively liberalized as well as when they were comprehensively regulated.

The Sudanese savings bank apart, the experience of the special purpose banks and the POSB, in the 1980s, suggests that they have been adversely affected by the Islamization measures. Some of these institutions are already in the process of being phased out of the financial market.

The analyses in this chapter suggest that the present banking system may not be able to play a leading role in economic development unless genuine banking policy and regulation are in place; *adhoc* monetary and financial policy may not only hamper the growth of financial intermediation, but also reduce its efficiency. It is obvious that financial reform is urgently needed. But, policies to enhance financial development and a more efficient participation by banks in development financing should be part and parcel of an overall economic strategy that aims, first, at economic stabilization by means of containing public deficits, and thereby public borrowing from the banking system. Second, improvement of the investment environment, and third broadening of the financial structure and instruments, and harmonization of banking

activities.

Notes:

1. In Burae (1984). PP.6-13.
2. Bank of Sudan Act (1959) as amended up to 1983.
3. for further discussion see Ali (1975), P.145.
4. See Bank of Sudan Annual Report (1978), P.68.
5. The Exchange Bureaus Act (1979) as amended up to 1983, Bank of Sudan , Khartoum.
6. Bank of Sudan Annual Report 1976, P.60.
7. Bank of Sudan Act (ibid), section 5.
8. Interviews were supplemented by banks annual reports and books.
9. The investment environment in Sudan, among others, suffers from: (1) the lack of clear development plans and strategies, and the consequent lack of well-defined economic priorities and investment incentives; (2) Instability of macroeconomic policies such as exchange rate policy, and inadequate tax and custom rates and rigid regulations in the formal sector.
10. These banks are: the Agricultural bank of Sudan, the Industrial bank of Sudan, the Sudanese estate bank, and the Sudanese savings bank.
11. Ministry of Finance (1988/89): The Economic Survey, P.172.
12. A full discussion of monetary policy and its impact on economic growth may be found in chapter 7.
13. Banks' Islamization Act, Dec. 1984, P1.
14. See table (4.12) section 4.6.
15. Bank of Sudan Annual Report 1978, P.68.
16. In M. M. Ahmed (1983), PP.5-6.
17. See Bank of Sudan Reports 1980, 1983, 1986 and 1988 - sections on credit policy.
18. Interview with S. Ambada of the department of economics, University of Khartoum, a member of the second committee.
19. The Banks' Islamization Act (ibid), P.1.
20. Bank of Sudan (1987): The compensatory interest rate scheme, P.1
21. Some banks do not permit the withdrawal of investment deposits before the lapse of a certain period, normally one year.

CHAPTER 5

ISLAMIC BANKING: THEORY AND PRACTICE

5.1 Introduction:

The introduction of Islamic modes of finance has been a characteristic feature of recent developments in banking throughout the Islamic world. The core of Islamic finance is the abolition of predetermined rates of interest received or paid for the use of money. Although the prohibition of interest rates by the Quran is not debatable, some of those concerned tend to distinguish between nominal and real rates of interest and maintain that Islam is concerned with the latter. In this view, a nominal rate of interest that is not higher than the rate of inflation is permitted. Nonetheless, legislation of Islamic banks throughout the world consider interest rates, however defined, as illegal(1).

It is beyond doubt that the elimination of interest rates and subsequent creation or adoption of non-interest-bearing financial instruments can have far-reaching economic and social consequences, particularly in the sphere of resource mobilization and allocation. In Sudan, the first Islamic bank commenced operations in 1978, and was soon followed by a number of banks, as well as non-bank financial intermediaries, that operate according to Islamic principles. The entire financial system of Sudan was instructed in 1983 to remove interest rates from its domestic operations. But, this policy was soon relaxed and a form of interest rate was permitted in 1987.

This chapter endeavors to provide an objective theoretical and empirical analysis of the economic significance of Islamic finacial instruments and intermediaries. The scheme of the rest of the chapter is as follows. Section (5.2) contains a brief discussion of Islamic injunctions concerning

interest rates, whereas section (5.3) discusses the main financial instruments innovated or adopted by Islamic banks. Section (5.4) examines the theoretical basis of financial intermediation in Islam, with special reference to its role in the saving-investment process. In section (5.5) Islamic modes of finance are compared with recent financial innovations in Western banking. Section (5.6) provides an empirical assessment of the operations of Islamic banks in Sudan during the period 1978-88. Finally section (5.7) gives a summary and examines the implications of Islamic banking on wider aspects of monetary development.

5.2 Islam and the Rate of Interest:

The Quran explicitly prohibits transactions involving *Riba*, which is the Arabic term connoting payment or receipt of a fixed amount over the principal of borrowed money. Condemnation of *Riba* may be found in many Quranic verses:

> "Those who live on *Riba* shall rise up before Allah like men whom Satan has demented by his touch; for they claim that *Riba* is like trading. But, Allah has permitted trading and forbidden *Riba*(II,275)".

The interpretation of the word *Riba* by Islamic jurists and economists has been rather controversial. One view(2) identifies *Riba* with exhorbitantly high rates of interest (usury), which exploit borrowers and enable lenders to make undue gains. In this view the rate of interest is permitted as a reward to savers, especially in the case of productive loans and provided that its real magnitude is not substantially different from zero. The alternative view forbids all forms of interest rate, nominal or real, irrespective of the nature of transactions in which it is used. The reason being that interest is an addition to the

principal, and the Quran says:

> "O ye who believe observe your duty to Allah, and give up what remains (to you) from *Riba*, if ye are in truth believer. And if you do not then be warned of war (against you) from Allah and his Messengers. And if ye repent then ye have your principal (without interest). Wrong not and ye shall not be wronged" (II, 278-79)..

The term principal in the above verse refers to the nominal or face value of lent money. Although the original Quranic injunctions prohibiting interest rates are axiomatic, various justifications(3) may be found in the Quran as a set. Islam is a system of social justice in which wealth is considered as a trust from God to man who is supposed to use it to help others in every way possible. The rate of interest runs counter to this principle because it reinforces the tendency of wealth to accumulate in the hands of a few. Moreover, Islam encourages hard work and condemns guaranteed gains from financial operations in which the lender does not take part in the risk of potential loss as this may in turn inhibit innovative and productive economic activities. Conversely, under predetermined interest rate regimes and in the event of substantial gains from investment, the borrower gets the entire amount of profit less the fixed interest payment. Therefore, interest rate will be inadequate as a reward to lenders. Finally, interest rate gains which relate to time and not hard work may make part of the society dependent on others' labour, hindering it from realizing its full output capacity.

The former Quranic verse indicates that, and indeed in several passages, Islam allows trade and profit making. But, Islam condemns abnormal profits derived, for example, from monopolies and cartels as well as profits relating to socially destructive activities such as drugs trafficking. The distinctive features of profit, as opposed to interest

rate, are that it is uncertain and variable. The essence of Islamic finance is that returns to savers (lenders) are to be linked to profits or losses realized by borrowers, and therefore both parties are subject to the risk involved in investments. We examine below the financial instruments adopted by Islamic banks in order to manifest the Islamic principles, according to which profits and losses are shared among savers, investors and financial intermediaries.

5.3 Instruments of Finance in Islam:

Islamic banks have been actively engaged in search for financial instruments that are compatible with Islamic principles. In fact, some conventional banking instruments, such as general banking services, which do not involve finance and for which a fee or commission is allowed, are permissible in Islam. The discussion in this section, however, focuses, basically, on the instruments innovated by Islamic banks. For analytical convenience, these instruments are classified below, in terms of those relating to the liabilities side of a commercial bank's balance sheet, and those relating to the assets side, i.e. sources and uses of funds respectively.

5.3.1 Sources of funds:

In addition to their own capitals and equities, Islamic banks can raise funds by creating two basic forms of liabilities:

(1) Transaction deposits: These deposits are equivalent to demand deposits of conventional commercial banks in that they are directly related to transactions and payments. The nominal value of transaction deposits is guaranteed by the bank without any interest payment. The bank provides a variety of services to depositors in this category such as checking facilities. In essence, transaction deposits have a

100% reserve requirement, and thus the only way for the bank to cover the costs involved in their maintenance is to levy a commission or service charge on them. Though such reserves ratio makes transaction deposits completely safe financial assets, it restricts the ability of banks to provide credit. The reason for the 100% reserves ratio is that since transaction deposits are of short term nature, they can only be used to finance loans for short-term operations such as purchase of production inputs. The profit/loss pertaining to such loans may prove to be impossible to calculate. It is interesting, however, to note that Islamic banks have, in practice, introduced legal procedures by which they can, subject to individual depositors' discretion, obtain authorization for the use of funds in transaction deposits to finance short-term credit(4). It is also possible that part of transaction deposits can be used for the purchase of suitable government securities, the face value of which is 100% guaranteed.

(2) Investment Deposits: These deposits are normally held for the purpose of earning income and cannot be withdrawn before the lapse of a certain period of time. They closely resemble business shares, in that their nominal value is not guaranteed and the returns on them are uncertain and variable. The bank acts as a financial trustee that accepts deposits and invests them on the behalf of depositors in any form of financial arrangement that satisfies Islamic requirements. The only thing agreed upon in advance to the employment of funds in this deposits category is the basis on which profit/loss is distributed between the bank and the borrower on one hand, and between the bank and savers on the other. The basis of distribution in the former case is normally the net profit/loss realized by the investor, and in the latter case is that realized by the bank. A distinction, however, needs to be made between investment deposits and

bank's common stocks. Firstly, in contrast to shareholders, depositors would not have any say in the management of the bank, and, secondly, payments of dividends on common stocks depends on the bank's discretionary policy, where a certain percentage of profit or loss will always be paid to depositors.

It is to be conceived that since there are no uniform and predetermined rates of interest, savers wishing to hold their funds in the form of investment deposits would face the task of obtaining information on the relative performance of different banks, in order to choose between them. This, of course, gives rise to various uncertainty and information costs. The implications of such costs, together with that of uncertainty of profits, on savings and investment behaviour are discussed in the following section. Uncertainty and information aspects aside, depositors in this category also face the fact that investment deposits are highly illiquid. As we will argue in chapter 6, both the information and liquidity problems might be substantially reduced if there is a secondary securities market in which investment deposit certificates can be traded. This market, in addition to providing liquidity through the transfer of deposits certificates, may provide the necessary signals to the public on the relative current and future performance of individual banks through pricing of their deposit certificates. But, it remains unclear how Islamic banks can mitigate the liquidity and information problems if secondary securities markets do not exist.

It appears that in as much as investment deposits are concerned, Islamic banks are basically equity institutions. This has the important implication that banks can respond easily and rapidly in the event of a banking crisis, because as the face value of these deposits is not guaranteed and will vary according to the performance of the bank, any

change in its assets' position will be partly absorbed by changes in the value of deposits held by the public.

5.3.2 Lending Instruments of Islamic Banks:

The profit-and-loss-sharing (PLS) principle calls for partnership between savers and users of funds, and financial intermediaries, and implies that various parties are liable to risk and uncertainties characteristic of investment activities. There are two basic forms of participation devised by Islamic banks; namely *Mudarabah* and *Musharakah*.

(1) *Mudarabah:* *Mudarabah* is a financial arrangement in which the bank provides all the necessary financial capital, while the investor provides all human capital needed. The two parties share the uncertain profit according to an agreed formula. In the case of project failure, the capital holder, or the bank and its depositors, bears the entire financial loss, whereas the entrepreneur loses his time and effort invested in the project. In the life time of the project, the bank is the sole owner of it, and the borrower is the manager. *Mudarabah* has traditionally been confined to commercial activities of short duration (Igbal and Mirakhor, 1987). Banks can make loans to customers directly or indirectly through a *Mudarabah* (equity) company, the capital of which is provided by banks in the form of direct equity or through loans with equity features. Banks receive *Mudarabah* certificates which can be traded.

(2) Musharakah: *Musharakah* is a joint venture in which there is more than one contributor to the financial capital. The profits and losses are to be shared according to the respective capital contribution of each party. Since *Musharakah* financing involves more than one party, it corresponds more closely to an equity market in which shares can be acquired by the public, banks or the government. This form of financial arrangement can be used by firms to raise

funds by offering transferable *Musharakah* certificates in the market. Such certificates may be secured by the assets of the company and their value (price and return) determined by market forces.

(3) Other Forms of Financing. The strict PLS system may not be easily tailored to accommodate the needs of small scale borrowers and consumers, where projects cannot be clearly identified and evaluated by banks. There are four main alternative lending instruments, which are legally approved by Islam.

(i) Deferred payment sale or mark-up (*Murabahah*). This method provides a means for banks to purchase a product and resell it on the basis of deferred payment, in installments or lump-sum. The borrower (buyer) and the bank agree on the price of the product plus a profit margin or mark-up. This method satisfies Islamic legal requirements in so far as the lender takes physical possession of the goods being financed and the mark-up is not related to the length of the period over which the transaction is to be completed. This means that the lender is also subject to the risk of potential loss.

(ii) Purchase with deferred delivery. This method enables banks to purchase goods at negotiated prices, but to be delivered at some future date. The bank pays the seller the full amount at the time the contract is signed. It is suggested that this method can be of particular importance for agricultural fianancing. For instance, it can be applied to farmers to help them obtain the funds they need for agricultural operations, with the promise of selling an agreed amount of their future output to the bank. The assets of the farmer can be used as collaterals or security against fraud and negligance, but the lender would bear all financial losses incurred in the operation (Attia, 1986). But, obviously this kind of contract can be quite unfair to the

lender or the borrower if the market price of the product at the time of delivery turned out to be substantially different from that agreed upon in advance.

(iii) Leasing or Hire-Purchase. The bank can purchase a commodity - be it a machinery or consumer durable - and lease it to a borrower for a specified sum and for a certain period of time. The agreement can also provide for a lease-purchase of the commodity. In this case payments made by the borrower would include a portion which can be earmarked for the final purchase and transfer of ownership of the product i.e. the bank can receive a payment for the cost of the product as well as a share in its net rental value. Over the period of the lease, both parties also take part in the risk of potential damage.

In view of difficulties associated with credit financing(6) and lack of capital markets in most LDCs, the idea of leasing has recently been proposed(7) as a means for domestic as well as foreign financial institutions to assist development in LDCs in a more direct way. It has been suggested that funding of capital investment in LDCs requires a turn to lease finance that passes effective ownership to the lessee irrespective of the lessor's legal title. The owner (lessor) has an interest that is over or equal to the rights of a secured creditor. The lessee gets closer to 100% financing, without high collaterals or compensating balances. Besides, the transaction can be tailored to its precise needs, sometimes to the point of avoiding controlled interest rates. In fact, hire-purchase, deferred payment and purchase with deferred delivery as financial instruments are commonly used by Western financial intermediaries, particularly specialized ones(8).

(iv) Services charges. As mentioned earlier, Islamic banks are legally allowed to levy a service charge on the loans they make or for their services as trustees. The only

condition, here, is that the charge should not be related to either the amount of the loan or its duration. This method is particularly relevant in the case of consumption loans, overdrafts or small scale borrowers.

In addition to financing investment through the above instruments, Islamic banks can undertake investment directly by establishing their own corporate enterprises. The bank will eventually be responsible for both funding and management.

The above discussion indicates that Islamic banks have developed a variety of financial instruments, which make it possible for them to perform two functions. First, they can provide much of conventional banking services, and second they can actively participate in promoting capital markets, and thereby provide a new impetus to economic growth.

5.4 The Islamic Financial System and Economic Development:

It has been argued in chapter 2 that though the interest rate mechanism is central to the functioning of conventional financial systems, its effect on the growth of savings and investment is rather ambiguous. Similarly, the extent to which the elimination of interest rates, and their replacement by profit rates, can influence the saving-investment process is not clear cut; it depends on the initiatives undertaken by financial intermediaries and how savers and investors respond to the profit-and-loss-sharing instruments. This section examines the economic context of the participation principle in terms of its possible influences on saving and investment in specific and on wider development aspects in general.

5.4.1 Saving Behaviour Under the Islamic System:

The focus of both critical and proponent economic analysis

of the PLS system has been the behaviour of savings. It is in this area that the profit-and-loss-sharing instruments appear to have no clear advantages over conventional ones. The critics contend that the introduction of a financial system based entirely on PLS arrangements would reduce savings and retard development[9]; the reasons being increased uncertainty of the rate of return (profit), and consequently high risk surrounding consumption and savings decisions. Where savers in the conventional financial system face only inflationary uncertainties, those in the Islamic counterpart are subject to uncertainties pertaining to both the rate of inflation and the nominal rate of return on deposits. And assuming that the two types of financial systems are confronted with the same investment opportunities (i.e. the same mean rate of return) and use them in an equally efficient way, the volume of savings is expected to be lower under the PLS system. However, the question of whether uncertainty lowers the rate of savings relies on the assumptions made about the utility function and its risk properties; the degree to which the future is discounted, the income and substitution effects and on the relationship between uncertainty and returns.

Theoretical studies of the impact of uncertainty on saving-consumption decisions are far from being conclusive. For example, on the one hand, Pheleps (1967) shows that if future non-capital income is subject to risk, then an increase in temporal risk dislike (aversion) is a sufficient condition to raise uncertainty about future income. This, in turn, would lower consumption and raise savings. Hanson and Menezes (1978), on the other hand, demonstrate that with respect to capital income the combined income and substitution effects of rising uncertainty is indeterminate. Aside from this, it is theoretically possible that the two sources of uncertainty (inflation and nominal return) to depositors are not really

independent. If inflation and the profit rate are positively correlated, the nominal rate of return would tend to balance or even outweigh the rate of inflation, considerably suppressing potential variability of the real rate of return on savings.

There can be many reasons for increased uncertainty being associated with increased nominal return. Firstly, the use of borrowed money on a PlS basis amounts to removing interest payments from the cost side, and accordingly both lenders and entrepreneurs become residual income earners. In contrast, since in the interest rate regime entrepreneurs take the whole risk and ensure repayment of borrowed funds, they may have to pay low rates of interest relative to the return on investment. Thus, the rate of return on savings is likely to be higher under the PLS system. Secondly, since the remuneration of savers, financial intermediaries and entrepreneurs is determined by investment performance, and since all parties participate in the risk of potential loss, better quality investment would be undertaken (see the following section).

It appears, therefore, that there is no strong theoretical reason for the volume of financial savings to decline if Islamic modes of finance are adhered to. Nevertheless, the issue of whether savings would actually decrease or increase when the financial system is fully Islamized remains to be largely empirical. But, introduction of PLS instruments alongside their traditional counterparts may well generate a net increase in financial savings. There are two main reasons for this to happen. Firstly, the coexistence of the two systems will widen the range of financial assets available to both savers and investors, and assuming that competitive conditions prevail this would result in an increased financial intermediation, as well as higher real returns on savings. Secondly, the PLS instruments may attract additional

savings from individuals who either have religious inhibitions concerning the use of interest-based instruments or regard the risk and return characteristics of the new instruments sufficiently attractive" (Karstein, 1982, and De-Rosa, 1986).

The economic characteristics of the PLS system aside, there are certain religious elements of Islam that can favourably influence the behaviour of consumers and investors in an ideal Islamic society(11). First, adherence to Islamic percepts imposes a number of constraints on the utility function of the believer. For example, Islam explicitly prohibits the consumption of non-basic necessity commodities, and discourages acquisition of goods that have no use, prestige apart. Second, Islam requires the payment of compulsory levies representing transfers to those in need, and imposes a 2.5% tax rate on idle wealth including jewellery. This tax together with inflationary pressures may effectively reduce any tendency towards hoarding, even on the part of rural people who would then seek profitable investment avenues for their savings. Finally, the Islamic financial system may be characterized by a low degree of risk-aversion (disinclination), as Islam encourages believers to undertake adventuresome activities and to rely on God's will when risk cannot be calculated. These arguments are simple deductions from the whole set of Islamic tenets and appear to link the success of Islamic finance to the existence of an ideal Islamic community.

5.4.2 Investment Behaviour Under the Islamic System:

It is in the sphere of investment that the argument for Islamic finance seems to be more convincing. The discussion in chapter 2 suggests that the extent to which the financial system can contribute to development financing in a developing economy is subject to a number of constraints.

These include shallow and fragmented financial markets, and narrow choice of financial assets and claims available to savers and investors, as well as endogenous constraints that bias the allocation of credit against less established and small scale enterprises. The repressionist models have emphasized the need for positive and relatively high real rates of interest in order to mobilize savings, integrate financial markets and bring about a more efficient allocation of investible resources. In the PlS system where returns to savers are determined by the performance of the real sector, they are unlikely to be kept artificially low. Nonetheless, the level of returns on deposits would depend on the availability of investment opportunities and an allocation of credit based primarily on the expected profitability of projects. This is the virtue of our hypothesis regarding the allocation problem, which we have already examined in terms of the allocation mechanism of a conventional system of finance (chapter 2). It might be constructive to contrast the analysis there with the PLS mechanism.

As we have already seen in the Stiglitz and Weiss framework, interest rate liberalization may not result in an improved credit allocation due to conflict between the interests of borrowers and those of lenders. For example, given the choice of projects borrowers would undertake projects that promise higher returns, and probably involve higher risk. Such inclination would be reinforced by rising or high interest rates. Banks, on the other hand, would prefer more secured loans even if they promise lower returns. As a result the average productivity of investment projects financed through debt is likely to be lower than that of the projects which investors alone may undertake. The disharmony in attitudes towards risk and return stems from the fact that rewards to investors depend on the performance of the projects undertaken, whereas rewards to banks and their

depositors are fixed in nominal terms. In contrast, in the PLS system all parties take part in the risk involved in investment activities and returns to each of them depend on the investment's performance. Assuming that risk and return are positively correlated, as Stiglitz and Weiss suggest, there will be a tendency of decreasing risk-aversion on the part of the Islamic bank as its income becomes a function of investment's yield. Moreover, the PLS system may be more adaptive to the requirements of new and innovative entrepreneurs, since there is less or no need for collaterals. Hence, it seems that the PLS system is likely to allocate investible resources in a more competitive and productive way. Indeed, it can also raise the volume of investment as Ulhaque and Mirakhor (1987) suggest:

> "The level of investment may actually increase under certain conditions. Intuitively, this..result seems plausible as the move to a profit-sharing system does away with the distinction between the entrepreneur and the lender. A fixed cost for capital is no longer required to be part of the firm's profit calculations. The marginal product of capital can be taken up to the point where maximum profits are obtained without the constraint of permitting a fixed cost on capital" (P.158).

In practice, PLS financial arrangements necessitate a more direct involvement[13] of banks in investment activities by acquiring information about (or influencing) customers' projects. This, with a resulting understanding and reduced need for collaterals, may eventually provide a more wider access of banks to rural and small scale investors. Consequently, the PLS system may be a suitable mechanism for rural credit markets to be dismantled in the long-run. The integration of financial markets and rationing of investments on profitability basis may, in turn, lead to unification of

returns to investments across economic sectors.

5.4.3 Islamic Banking and Promotion of Entrepreneurship:

Although it may hinder those investors who like to have a free hand in the use of borrowed funds, the principle of participation, and implied project monitoring by banks will ensure that they either act as entrepreneurs themselves or provide valuable technical and managerial support to investors. This would undoubtedly enhance the growth of entrepreneurial talents. Again, since participation allows banks to finance the entire capital requirements of an entrepreneurs from the beginning, it may not only promote entrepreneurship, but also ensure that full use is made of potential entrepreneurial skills.

Banks can play a particularly important role in entrepreneurial development where the phenomenon of demand-leading finance prevails. Where finance follows, banks may expand and merely respond to the needs of businesses, in which case close links between financial and corporate enterprises are likely to give rise to such market imperfections as bank-holding company structures.

In the early stages of industrialization of many developed countries banks had, through the provision of credit as well as non-credit services, spawned entrepreneurship. One commonly cited[13] example is that of Germany in the 19th century, where private bankers were successful in promoting and organizing various manufacturing establishments and infrastructure, including railroads. German banks were also characterized by direct funding operations. Besides their relatively large capitals, banks, through their close links with capital markets, took care of the necessary issues of stocks and bonds to help entrepreneurs find additional means. And in addition to funding, banks performed entrepreneurial

functions of considerable importance. "In some instances bankers initially perceived new opportunities for investment and suggested methods of exploiting them. More important, however, were entrepreneurial tasks that were allied with certain financial ends. Frequently, interested bankers obtained government approval and support for the projects of others. Then they have to create a market for the new securities. Finally, it was essential for them to ensure that the policies, financial or otherwise, of enterprises newly created or enlarged would continue to favour" (Tilly, 1967, PP.178-79).

The relevance of such banking functions to Islamic banks is perhaps obvious, as these functions are invariant to their nature and the instruments that call for close participation. Moreover, it is interesting to note that the form of German multipurpose banks, which was also a feature of financial intermediation notably in Australia, Switzerland, and Belgium, has been recently recommended(14) for LDCs as an alternative to conventional banking, provided their preoccupation with economic development. The distinctive feature of multipurpose banking is direct funding and close relationships between banks and borrowing firms, which, often, entails banks providing non-credit services. In addition to promoting entrepreneurship, such relationship is said(15) to: (1) give bankers deep insight and close surveillance into the business network of customers, thereby lessening dangers of business failure; (2) facilitate banking and industrial assets' diversification which will also attenuate risk. Furthermore, in stressing the significance of increased participation under universal banking, Karl Erich Born (1984) argues that since banks and depositors have stakes in the long-run prosperity of enterprises and the latter assume the role of technical and financial consultants as well as marketing advisors, this would alleviate the need

for specialized financial institutions necessary to provide long-tern industrial capital.

Assuming that multipurpose banks are likely to be large in size, they may also enhance economic efficiency as predicted on economies of scale. This, together with promotion of entrepreneurship, increased financial stability via reduced risk and elimination of conflict in the interests of borrowers and lenders, makes multipurpose banking, and to a comparable extent Islamic banking, a possibly more efficient form of intermediation.

5.5 Islamic Financial Instruments and Recent Financial Innovations in Western Banking:

Rapid and sophisticated financial innovations(16), relating to both institutions and instruments, are characteristic features of developed economies. Our aim in this section, however, is to examine innovations in financial instruments that bear similar characteristics to those found by Islamic banks or can easily be adopted by them.

"The borrower's desire for flexibility in debt-servicing and the lender's wish for greater liquidity are not mutually exclusive objectives" (Saini, 1986, P.6). Therefore, innovations in capital market instruments should satisfy at least one party's needs without impairing those of the other side. Accordingly, two types of innovations may be identified in terms of those designed to provide flexible repayments for borrowers, and those intended to satisfy lenders' needs for greater liquidity in their assets. In the first category the following arrangements have been introduced to adapt borrowers' debt-servicing to changing economic environment; particularly inflation and exchange rate fluctuations.

1. The flexible maturity loan under which debt services payments are held constant in absolute terms. The amortization component of debt services decreases with

interest rises, and subsequently the maturity of the loan is increased. If interest rates rose sufficiently, however, negative amortization would occur, so that lenders would be providing new money to borrowers(17). This method can help borrowers to correctly anticipate their debt-servicing commitments, and make their plans accordingly. It also helps lenders to match their loan commitments and loan maturity, and consequently minimize interest rate risk. But, the lender will still be unsure of the timing of principal repayments. Interest rate aside, the characteristics of this method appear to be compatible with PLS requirements. Thus, replacement of the interest rate by a profit rate would not only make its application by Islamic banks straightforward, but also make it more reflective of changing economic conditions, as the profit rate may bespeak business conditions more accurately than the rate of interest.

2. The graduated payment loan under which debt services payments are initially low and gradually build up. This method is especially relevant to project finance, where the earning power of the project improves as it proceeds towards maturity. Such type of credit arrangement may also invite new money from lenders, should the capital requirements of the project exceed their budgeted level. Again replacing the interest rate component by the profit rate, the graduated payments loan may be identical to loans under *Musharakah* arrangement. In either method, debt-servicing is linked to the completion of the project and additional benefits and responsibilities exist for both lenders and borrowers. Borrowers will be relieved that other sources of fund will not be tied up to service a particular loan, while lenders must carefully evaluate the commercial viability of the project and accept the responsibility in terms of lower amortization should the project not be as successful as planned.

3. Shared equity loan, which invites lenders to accept below market rates on loans in exchange for an equity share in the revenue generating project. Thus both lenders and borrowers will be concerned with the riskiness and profitability of the project, but without contradictory interests. Saini (ibid) points out that since equity lenders assume added risk, they will presumably be compensated for doing so; in the form of dividends on equity shares that arise by the loan, besides the below market rate of interest. The total reward, however, can be easily defined in terms of an appropriate share in the profit generated by the project, and accordingly the method can be used by Islamic banks.

Generally, lenders need to diversify their loan portfolios in order to reduce exposure concentration and attendant risk. One of the innovations that can help lenders to do so, and meanwhile ensure greater liquidity, is Transfer Loan Instruments (TLI). This method standardizes the system of transferring loans from a primary to a secondary market. In effect, it creates a market in which loans already outstanding may be traded and banks can grant TLIs with varying maturity denominations. When a TLI is sold the new holder will be entitled to receive interest rate and other benefits of the original loan agreement. A transfer loan instrument that carries profit instead of interest might be valuable to Islamic banks in the pursuit of raising liquidity ratios and managing their assets while abiding by Islamic principles.

The discussion of the theory of finance in an Islamic context seems to suggest that though Islamic financial intermediaries may not be more efficient than their conventional counterparts in mobilizing savings, they are likely to produce an allocation mechanism that is more growth-oriented. But, the practice of Islamic banks may entail higher costs to them relative to those of traditional

banks. We examine below the relative economic significance and cost-efficiency of Islamic banking as practiced in Sudan.

5.7 The Activities of Islamic Banks in Sudan:

This section examines the emergence and objectives of Islamic banks in Sudan, and attempts to assess their economic significance in terms of their deposit, investment and profit strategies during the 1980s period.

5.7.1 Emergence and Objectives of Islamic Banks:

The emergence of Islamic banks in Sudan has been associated with certain economic and political developments. Following the 1972 denationalization Act, both domestic and foreign private enterprises grew rapidly. The banking sector which was dominated by government-controlled, and foreign, banks, however, continued to offer little access, especially to new and relatively small scale, indigenous enterprises. Thus, local business groups were eager to penetrate the banking sector not only as a form of investment *perse*, but also for the services and credit facilities they expect to have in the future. Besides, political developments in the country have been increasingly overshadowed by revival of Islamic ideals, which were then manifested in the establishment of Islamic enterprises, including banks.

The first bank, The Faisal Islamic Bank, was incorporated in 1978, and its immediate business success provided the impetus for five other Islamic banks to be opened between 1982 and 1987. Researchers and policy makers(18) concerned with the appearance of Islamic banks in Sudan were largely preoccupied with their ethical and conceptual aspects. It is natural, therefore, that we focus our attention on the economic dimension of Islamic banking. It should be, however, noted at the beginning that any conclusions to be drawn from the experience of Islamic banks in Sudan, which is quite

short, are necessarily tentative.

Islamic banks in Sudan have a wide range of social and economic objectives, that are claimed to be consistent with Islamic principles. The main objectives are: (1) elimination of interest rates from financial activities, and undertaking of business on the basis of profit-and-loss-sharing; (2) payment of *Zakat* or Islamic tax; (3) prohibition of monopoly; and (4) promotion of all aspects of business that are socially desirable and not specifically disallowed by Islam.

The first objective has already been elaborated. The second implies that even if not required by the authorities to pay tax, or on top of legal tax, Islamic banks shall pay *Zakat*. The rate of *Zakat* is 2.5% per annum, and its base is the bank's net assets; *Zakat* proceeds are payable to the poor and needy in the society. The last two objectives state explicitly that Islamic banks are, by virtue of their own constitutions, bound not to have monopolistic statuses, and that they are, in fact, multipurpose financial institutions.

5.7.2 Deposits, Investment and Profit Performance of Islamic Banks:

Islamic banks in Sudan provide for three types of deposit accounts; transaction or current accounts; investment accounts; and saving accounts. The characteristics of the first two types of account are the same as discussed in section (5.2.1) above. Saving accounts differ from transaction accounts only in that they carry no service charges, and their holders may be entitled to special borrowing facilities.

The deposits performance of a sample of Islamic banks[18] in the period 1983-87 is contrasted in table (5.1) below with that of a sample of traditional commercial banks. While the rate of growth of the total deposits of the latter category was fluctuating, that of the deposits of the former was

steadily rising, reflecting, perhaps, their rapid horizontal expansion. In terms of deposits composition, Islamic banks compare favourably with conventional banks in that a higher percentage of their deposits is in the form of investment and saving accounts. These deposits, being more stable, can provide funds for relatively long-term projects.

Table (5.1)

Size and Type of Islamic Banks Deposits Compared with Conventional Banks: 1983-87

Year	Islamic banks				Conventional banks			
	Demand Dep. %	Investment And saving%	Total Ls mn	%C	Demand %	Time and Saving%	Total Ls mn	%C
1983	62	38	288	-	77	23	1963	-
1984	69	31	320	11	83	17	1219	27
1985	72	28	370	16	84	16	1480	22
1986	78	22	441	19	83	17	1896	28
1987	82	18	577	31	80	20	2364	25

Source: Annual Reports of respective banks, for respective years; Note: %C is percentage increase. All figures have been rounded.

Unfortunately, the share of investment and savings deposits has been decreasing, probably as a result of falling profit rates on them (table 5.2). This is particularly evident in the experience of the Faisal Islamic Bank. The bank had maintained an annual deposit rate of profit of about 15%[19] between 1979-82, whereas the average deposit rate of interest was 10% per annum. Over this period the bank's deposits grew at the average rate of 339%, compared with 33% for all commercial banks' deposits. On the basis of this observation Brown and Shaeldin (1985) concluded that the bank had attracted savers by the policy of paying high rates of profit rather than that of not paying interest. This argument seems

plausible, as, despite the huge increase in the bank's deposits and indeed the deposits of Islamic banks as a group, total commercial banks' deposits have maintained, nearly, the same historic rate of growth (Chapter 4). During the period 1983-87, however, the rate of profit paid by Islamic banks individually and collectively was comparatively low; and, at the same time, total deposits grew at lower rates and the relative share of profit-bearing deposits was shrinking. If profit rates were not the cause of depositors switching away from conventional to Islamic banks, which appears to be evident, then the reasons must relate to religious satisfaction and the special credit facilities provided by Islamic banks as a reward to certain categories of deposits.

Table (5.2)

Average Annual Rates of Profit (Interest) Paid by Islamic and Conventional Banks; 1983-87

Year	1983	1984	1985	1986	1987
Islamic banks	n.a	7.2	9.0	8.2	6.0
Others*	12.6	14.9	10.5	8.7	7.7

Source: As in table 5.1 above

Notes: n.a = not available, * While Islamic banks strictly confirm to profit arrangements, conventional banks were allowed to use both profit and interest instruments.

On the application of funds side, Islamic banks in Sudan use almost all the non-interest-based instruments discussed earlier. There is also an additional lending instrument known as *Qard Hassan*, which is a profit-free loan provided mainly for consumption purposes. Moreover, Islamic banks are allowed to undertake direct investment provided that: (1) the fixed capital requirements of the project can be met from long-term financial assets such as equity capital and investment deposits; and (2) the economic feasibility and profitability

of the project is based on a well documented appraisal. Indirect investment or lending takes largely the form of *Mudarabah*, which is normally of short-term nature, and *Musharakah*, which is usually of relatively longer-term nature. Unfortunately we do not have a breakdown of Islamic banks' advances by various types of arrangements. But, available information, relating to the Faisal Islamic Bank and the the Sudanese Islamic Bank indicates that *Musharakah* accounts for about 40% of their total advances during 1983-87. Besides being suitable for project finance, *Musharakah* arrangements have the advantage of mobilizing resources from outside the banking sector, because normally investors have to contribute to the capital requirements of their projects before inviting the bank's participation. For instance, between 1980 and 1987, the Faisal Islamic Bank extended Ls 922 mn in the form of advances towards 13,971 undertakings, the total cost of which was Ls 21,137 mn. The funds provided by customers were, thus, Ls 1,215 mn.

Table (5.3)

Total Advances and the Loan-Deposit Ratios of Islamic and Conventional Banks Compared: 1983-87

Year	Islamic banks		Conventional banks	
	Advances Ls mn	Loan/deposit	Advances Ls mn	Loans/deposits
1983	268	93	623	65
1984	265	83	654	54
1985	260	70	749	51
1986	288	66	1083	57
1987	374	65	1480	63

Source: As in table (5.1) above.

Table (5.3) above contains data on the loan-deposit ratios of, and total advances by, the two samples of banks referred

to above. With the two types of banks being subject to the same credit policy, the relatively higher loan-deposit ratio of Islamic banks may well indicate the acceptability and success of their lending arrangements.

Our study of total commercial bank advances, in chapter 4, showed the overwhelming share of commercial loans; namely export-import credit and domestic trade credits. Advances to agricultural and industrial producers were, until the late 1970s, negligible. Aside from that, commercial banks were suspected of confining their credit facilities to only a handful of monopoly capitalists(20). This picture has changed considerably since then. The share of agricultural and industrial loans has increased, and new classes of borrowers emerged, including artisans and handicraft. It is not possible to testify whether these changes in banks lending were due to the incorporation of Islamic banks as we have no complete data on their lending activities as a whole. But, the sectoral distribution of the advances of the Faisal Islamic Bank, FIB, (table 5.4) and their number and average size (table 5.5) is indicative.

Table (5.4)

Sectoral Distribution of Advances by the Faisal Islamic Bank (Ls mn): 1983-87

Sector\year	1983	1984	1985	1986	1987
Local trade	35	43	62	63	62
Foreign Trade	30	38	13	4	24
Industry	4	9	11	15	26
Agriculture	0.7	5	6	44	54
Handicrafts	2	2	4	7	11
Services	2.3	11	4	6	15
Total	74	108	100	139	192

Source: The Faisal Islamic Bank: 10 years of banking operations, FIB, Khartoum, 1988.

The former table suggests that the credit contribution of the Faisal Bank to priority sectors, agriculture and industry, exceeded that of specialized banks and as a percentage of the bank's total advances, it compares favourably with that of commercial banks in general (see chapter 4, table 4.8). In fact, the bank is accustomed to purchasing and leasing modern machineries and equipments to relatively small scale producers, as well as providing production inputs such as fertilizers and herbicides, which private small producers may not afford to import on their own.

The stated anti-monopoly aim of Islamic banks also appears to have been manifested in the Faisal Islamic Bank's lending policy. The figures in table (5.5) below show that its loans are becoming available to an increasing number of borrowers over the period 1983-87, with an average loan size of Ls 64,000.

Table (5.5)

Number and Average Size of FIB's Advances: 1983-87

Year	1983	1984	1985	1986	1987
Total Advances (Ls mn)	74	108	100	139	192
Total number of advances	1141	1366	2118	1891	3374
Average advance (Ls 000)	64.8	79.11	47.2	74	57

Source: As in table 5.4 above.

In addition to indirect investment, Islamic banks have been involved in direct investment in various economic sectors. For example, the FIB has established four specialized subsidiaries in the areas of insurance, trade, services and estate development. Almost all other Islamic banks have participations in the fixed capital of some economic enterprises. These investment and development orientations

have been well documented in our interviews and the reports provided by the four Islamic banks which are part of our sample of 8 commercial banks. The lending operations of Islamic banks appear to have the following common desirable characteristic features:

1. Apart from the central bank's directives, Islamic banks allocate specified amounts of funds to each economic sector in their investment strategies.
2. Finance of fixed capital, which is made possible by stable liabilities such as investment deposits, besides capital and equity shares.
3. Initiation of projects, sometimes in areas that had never been penetrated by commercial banks, such as agricultural crops production(21). Through direct participation, some Islamic banks have been successful in overcoming the traditional barriers of high risk, low return and lack of information, to rural credit markets.
4. Loans repayments are usually secured through partnership contracts, which are easily accessible for economically feasible projects.
5. Finally, participation, often, implied banks providing technical and managerial assistance, especially in connection with agricultural and industrial finance. Such services may not be affordable by individual investors, and, therefore, Islamic banks may fill this important gap in development activities.

Again it is not possible to quantify the contribution of Islamic banks to the development of entrepreneurship in Sudan. However, the non-credit services provided by Islamic banks in efforts to secure their investment commitments, and the fact that they normally establish relatively well-equipped research and development departments to help undertake direct investments, may well prove to be valuable to the economy as a whole. Further, Islamic banks have

sometimes financed projects that are socially desirable such as rehabilitation projects for drought-displaced families. These projects are hardly profitable, but undertaken basically in the pursuit of establishing the Islamic ideals, which banks have set for themselves. Whether the economic benefits from these and other lending activities of Islamic banks can be sustained in the future can only be judged after a reasonably longer experience.

Financial development as a catalyst of economic growth, however, requires financial intermediaries mobilizing and allocating funds to productive projects with greater economic efficiency. There is no precise measure of economic efficiency, but a crude approximation could be total cost per unit of resources mobilized. An economically efficient financial institution would entertain a low ratio of total cost to total deposits. The figures in table (5.6) below indicate that Islamic banks tend to have a higher, though slightly, cost-deposit ratio than conventional banks. This may reflect the costs implied by the nature of their financing instruments, or possibly the costs of opening new branches as these banks have been rapidly expanding.

Table (5.6)

Average Resource cost of Islamic and Conventional Banks Compared: 1985-1987

	1985	1986	1987
Islamic banks	0.05	0.06	0.05
Others	0.04	0.03	0.03

Source: Annual reports of the banks considered.
Note: (1) these banks are the 4 Islamic and the 4 conventional banks covered in our interviews and case studies.

5.7 Summary, Limitations and Implications:

The main objective of this chapter was to examine the nature and economic significance of Islamic banking at both theoretical and empirical levels. The theoretical analysis suggests that replacement of the conventional banking system by the PLS system appears to have an ambiguous impact on savings mobilization, but a more favourable effect on credit allocation and economic activity in general. The institutional aspects, instruments and strategies of Islamic banks seem to be geared towards supply-leading as against demand-following finance. It is, however, to be expected that allowing Islamic financial intermediaries to operate alongside conventional ones would foster financial intermediation in general and may thereby speed the process of development.

The theoretical discussion also pinpoints possible limitations of Islamic banking. Both the liabilities and assets of Islamic banks that are invariant to their development-oriented strategies would involve a higher degree of illiquidity. Moreover, extended involvement of Islamic banks in business aspects entails increased costs to them. These problems may, to some extent, inhibit the growth of financial intermediation under the strict PLS system, but obviously they can be overcome if a secondary securities or capital market exists. The relevance of such a market to Islamic banking in general and in the context of Sudan in particular will be examined in detail in the following chapter.

The empirical analysis of Islamic banking in Sudan showed no clear evidence to suggest that the incorporation of Islamic banks has significantly altered the historic growth rate of overall financial savings. But, it has been associated with an improved composition of these savings as well as a more desirable allocation of credits. Moreover,

Islamic banks have been relatively successful in penetrating rural credit and product markets. This may in the long-run lead to integration of not only financial markets but product markets as well.

It may be appropriate to point out some important implications of Islamic banking, namely on monetary policy and government finance. The elimination of fixed interest rates from the economic system would abandon all instruments of monetary policy that rely on them. These include deposits and lending rates, the discount rate and open market operations. While the central bank cannot control the rate of profit, however, it can still influence banks' deposit and lending activities by altering the respective percentage shares of depositors, banks and investors in total profits. As for the discount rate, it may be legally acceptable for the central bank to earn a certain percentage of the borrowing bank's profit; agreeing on a higher percentage than that due to customers will still be acceptable as profit is variable. The penalty rate, on the other hand, may be replaced by a financial, or otherwise, penalty that is not related to the size and duration of the bank's excesses. It is, however, not clear how the rate of interest can be replaced by the rate of profit in order to enable open market operations to be conducted, since securities, mostly government securities, are normally not tied to a specific project.

Government borrowing from the banking sector to finance current spending may create serious problems as the returns on such expenditure cannot be identified. But, in the case of loans for productive government investment, banks can provide funds on the PLS basis. Two suggestions have been offered for banks to accomodate government needs for current expenditure purposes. First, banks can simply extend *Qard-Hassan* or profit-free loan (Awad, 1985). But, obviously banks may not

have enough incentives to do so. Second, returns to banks on such loans can be linked to the rate of growth of national income (Karstein, 1982). The justification for this is that the rate of growth of national income is variable and may be closely related to the average rate of profit in the economy. Be that as it may, the Sudanese authorities are yet to respond to the monetary and financial problems posed by Islamic banks and to accomodate the latter's own requirements.

Notes:

1. S.A. Amin (1989), Chapter 4.
2. For example Abdelnasir (1988).
3. For elaborate theological arguments see M.N. Siddiqi (1985a).
4. N. F. AL-Mola (1985). As we shall see in section (5.3.2), this does not mean that Islamic banks have no instruments for short-term finance.
5. See the section below on the implication of accompanying risk and uncertainty on the saving-investment behaviour.
6. Problems with debt finance were discussed in detail in chapters 2 and 4.
7. OECD study (1986) by Wellon *et al*.
8. See Jack Revell (1973).
9. Traute Wholers-Scarf (1983), Pryor (1985) and Taylor and Evans (1987) give critical accounts of Islamic finance.
10. e.g. Hahn (1970).
11. These aspects are given utmost importance by such writers as K. Ahmed (1987).
12. Such involvement entails increased, and even prohibitive, costs to banks. Suggestions to reduce costs may be found in chapter 6.
13. See e. g., Tilly (1967) and Khatkhate and Riechel (1980).
14. Arguments concerning the relevance of multipurpose banking to LDCs can be found in Hester (1981), Silber (1983), Saini (1986), and Wellons *et al* (1986).
15. For instance, Virmani (1985) recommends that Korean banks should be allowed to hold equities to help reduce excessive debt-equity ratios of S. Korean business corporations.
16. For the processes and forces generating these innovations, and their universality in the West see Mayer (1982) and Silber (1983).
17. Saini (1986), P.7.
18. The comparison involves two leading Islamic banks (Faisal (1978) and EL-Tadamn (1983)) on the one hand, and two of the three largest conventional banks (Khartoum and Unity banks). The period is entirely dictated by data availability.
19. The FIB, however, enjoyed considerable privileges in return for its promotion of Islamic ideals. These privileges were not normally affordable to other banks, and included tax exemption of all its assets, profits, salaries, wages, gratituties and pensions of its employees (Brown and Shaeldin, 1985, P.22)
20. Brown and Shaeldin (Ibid), P.27.
21. An example of this is the participation by the Sudanese Islamic bank

in six crop production schemes, and the purchase of tractors on behalf of small farmers for the value of US$12 mn by FIB in 1980.

CHAPTER 6

THE OPERATIONS OF NON-BANK FINANCIAL INTERMEDIARIES, AND THE CASE FOR A SECURITIES MARKET

6.1 Introduction:

In examining the performance of the banking sector in chapter 4, it was found that bank lending is excessively manipulated by the authorities. Meanwhile, banks' own policies have, firmly, accorded with the "Golden Principle" that short-term deposits should only be used to finance short-term loans. And, in our study of the theory and practice of Islamic banks in the previous chapter, it is not clear that the relative success of these banks is, largely, due to the economic characteristics of the instruments they introduced. But, we concluded that the Islamic financial system is, essentially, an equity-based system, whose practical efficiency would require a market in which deposits and investment certificates may be traded. In the present chapter we shall examine the theory of capital or securities market, and argue that such a market should be viewed as a necessary and integral part of an economy whose financial sector conforms to Islamic principles.

But, first, we analyse the operations of non-bank financial intermediaries, and assess their contribution to capital formation in Sudan. Since the assets of these institutions are, generally, of long-term nature, the larger their share in the total financial assets of the economy, the more likely that a securities market can be successfully developed. Second, the chapter will advance a case for a securities market in Sudan.

The chapter is divided into 5 sections. Section (6.2), deals with the operations of non-bank financial intermediaries, and briefly discusses the informal money

market, whereas section (6.3), examines the theory and practice of securities markets, and how they relate to Islamic financial and capital markets. In section (6.4), the reasons and prospects for developing a securities market in Sudan are analysed. Finally, section (6.5), gives a summary, and concluding remarks.

6.2 The Operations of Non-bank Financial Intermediaries:

As mentioned earlier the financial system of Sudan embraces a number of non-bank financial intermediaries[1], of which the insurance industry, development and holding (*Mudarabah*) companies are the most prominent in terms of size and strategies. This section examines the performance of these institutions, their response to the abolition of fixed interest rates, and their likely impact on the development of a securities market.

6.2.1 The Insurance Industry:

Insurance[2] is a common fund intended to compensate individuals or groups for financial losses that occur outside their control. Its role in providing services of economic security is well summarized by Dunning (1971):

> "The insurance business is concerned with the pooling of risk; indeed one of its chief functions is to minimize costs of risk-bearing by shifting them from individual persons or institutions to groups of persons or institutions. The industry 'socializes' risks by converting high contingent loss into a low fixed charge...and in so doing releases resources for more productive uses (P.12)"

Thus, the economic significance of insurance activity stems from its function in effecting productivity and growth or

enhancing economic activities via the reduction and spread of risk. Though this function is important, it is usually difficult to assess. But, the process through which insurance companies provide security services, enables them to act as financial intermediaries or as borrowers and investors of loanable funds. Unlike banks, insurance companies cannot create money, but, with the generally long-term nature of their assets, they can contribute to development financing in relatively more substantial proportions. In addition to effecting development finance, insurance firms may influence monetary demand through the buying and selling of securities or by changing their investments' structure. For instance, in the USA, "because the contracts of life insurance companies involve, for the most part, long-term liabilities, the savings they accumulate are, largely, held in capital market assets, rather than money market instruments" (Dougall and Gaumnitz, 1986, P.111). On the other side, the insurance business augments, and expands with, foreign trade, and its development may be necessary for a country to earn foreign exchanges in international insurance markets.

The insurance industry in Sudan evolved around under the colonial administration and was closely linked to the expansion of foreign trade. However, little is known about the industry prior to the passing of the Insurance Control Act in 1960. Following this, the insurance market which was totally controlled by foreign firms witnessed the incorporation of national firms, which started transacting nearly all classes of insurance business. In 1970 all insurance firms were nationalized and their number dropped from 42 to 6. After economic and financial liberalization in 1979, their number, like that of banks, has more than doubled during the 1980s.

By 1988, there were 15 direct insurance companies[3], of which 12 are private, 2 public, and one jointly owned by the

private and public sectors. Out of this total, 10 companies are engaged in general insurance business (marine, fire, motor...etc), one in life insurance, and 4 in both life and general insurance (Bank of Sudan Annual Report, 1988, P.56).

Be that as it may, only recently has the share of the insurance industry in the total assets of the financial market appeared to be significant. Insurance firms came to accumulate substantial savings in the form of premium installments, which are, then, invested in a wide range of assets, both real and financial. But, with one public reinsurance company, the insurance business is dominated by government companies and transactions, which amounted to 60% of the market's assets in 1985. Though it might generate a more competitive environment, this large number of firms, taking share in a thin insurance market, are likely to be less efficient as there could be enormous diseconomies of scale.

The general trend of the sources and uses of insurance funds may be represented by information relating to 12 companies, for which data were available. In Sudan, insurance funds are composed of net premium installments plus shares of premiums reinsured, locally or abroad, that the insurer is allowed to retain. Premium installments rose from Ls 11 mn in 1978 to Ls 56.2 mn in 1983, and ls 161.3 mn in 1987. But, the respective net premium (after deducting amounts reinsured) income stood at Ls 3.5 mn, Ls 16.3 mn, and Ls 42.5 mn; with a high proportion of reinsurance transactions undertaken abroad. This amounted to 63% of the total of Ls 75 mn reinsured in 1986, and is partly attributable to under-capitalization of the national reinsurance company.

On the other hand, net claims, i.e. claims for which insurance firms are directly liable, have been steadily falling in proportion to net premium income. The net claim-installments ratio decreased from 99% in 1978 to 65% in 1983

and 55% in 1987.

A breakdown of gross premiums, as in table 6.1, reveals that Motor insurance is the main source of insurance funds; the second source is Marine and Aviation, followed by Fire and Allied business. Life insurance contributions were quite low for many years, and have completely disappeared as from 1987. The reasons being low per capita income, relative public unawareness of its benefits, and the Islamic views towards life assurance. With respect to the latter, Islamic insurance companies have adopted a system of "Social Reciprocal Responsibility" to substitute for conventional life insurance policy, which was judged incompatible with Islamic principles.

Table 6.1

Gross Premiums Received* for Main Classes of Insurance: 1986-1988 (in Ls mn)

Year	1986	1987	1988
Life and other Long-term funds	1.5	-	-
Motor**	28.4	63.5	90.96
Marine and Aviation	51.8	25.3	39.4
Fire and Allied Business	24.4	23.1	47.3
Others	8.96	12.3	20.8

Source: Insurance Control Office, Ministry of Finance, Khartoum.

Notes: * The 12 firms covered here are not the same as those referred to earlier. ** Third party liability and other.

Thus, there appears to be a rapid expansion in insurance funds, which is attributable to increases in international insurance prices, and revaluation of assets so that current values rather than book values are used(4). But, other factors, such as rises in imports due to trade and foreign exchanges liberalization in the 1980s, may have played an

important role.

The uses of insurance funds are tightly restricted by the Insurance Control Act as amended up to 1964. General insurance firms are required to hold 60% of their resources in deposits with the POSB, 30% in either bank deposits or government securities, and 10% in cash. Meanwhile, 90% of all long-term insurance income is to be placed in government securities and/or with the POSB, and the Insurance Control Office has to give consent for the release of amounts deposited with the POSB or commercial banks. Accordingly, the bulk of insurance assets are held in deposits, and in the form of outstanding (overdue) premiums to finance short-term credit, besides investment in real property. Investment in land and other real property accounted for 16.6% of total insurance assets in 1986, and 41.2% in 1987, while shares holdings were 5.6% in 1986 and 7.4% in 1987. Bank deposits were 17% and 25.4% in 1986 and 1987 respectively, whereas outstanding premiums amounted to 46% in 1986 and 17.3% in 1987. Of total outstanding premiums in 1986, 30% were due from government units and 60% from the private sector(5). Notwithstanding this, insurance companies have participated in financing medium-term and long-term investments in the form of Musharakah, which amounted to Ls 15.8 mn in 1986. This indicates the willingness of insurers to take risks, if the restrictions on the uses of their funds are relaxed.

To sum up, insurance firms have mobilized sizeable savings in recent years, but the uses of which are, largely, dictated by government policies. Yet, the rapid expansion, and increasing competition among insurance firms can play an important role in economic development. This trend, however, is restrained by a number of factors. Firstly, insurance firms are characterised by low capitalization; the paid-up capital of the 12 companies considered was Ls 11.6 mn in 1986. Secondly, and perhaps for inflationary conditions,

these companies, like individual investors, have shown a marked preference for investment in real property. Finally, with the abolition of fixed interest rates, the spectrum of investment instruments available to insurance firms is narrowed. Hence, for them to operate competitively in an Islamic system, they should be allowed to explore new investment avenues based on the PLS system. The future prospects for the insurance industry would depend on the removal of these constraints, and efforts to widen the local reinsurance market.

6.2.2 Development and Holding Companies:

The late 1970s and the 1980s witnessed the incorporation of 3 development companies, and 3 holding companies. With the exception of two public development companies, all these companies have been established on the PLS principles. And they attempt to harness investible resources, mainly through the sale of shares in a portfolio of securities, but the public development companies are mainly financed from official sources.

For both types of companies a profitable use of funds is the main objective. Aside from that they differ widely in terms of objectives, methods of operations, degree of risk undertaken, and relation with investors. Holding companies focus almost exclusively on short-term finance, or *Mudarabah* arrangements, and for this they are known as "*Mudarabah* companies". In contrast, development companies attempt to promote economic development by providing medium and long-term loans and non-credit services. The evolution of both types of institutions in the 1980s seems to be inspired by the PLS system, as the marked participation of Islamic banks in their activities may suggest. And this is probably an expression of the need for a capital market as an additional investment outlet under the Islamic system. We analyse below

the strategies and practices of these companies.

1. The Operations of Development Companies:

The first and largest of these companies is the Sudanese Development Corporation (SDC), which was incorporated in 1974, with an authorized capital of 500 mn (American Dollars, $). Its objectives include: exploration and evaluation of potentially profitable projects in various sectors; capital participation in private and public development projects; provision of consultation and guarantees to investors; and promotion of an entrepreneurial class oriented towards productive investment. The SDC participation in any project is, however, not to exceed 50% of total capital requirements.

Over the period 1974-83, the company granted $151.5 mn to a large number of projects whose total costs amounted to $1.2 billion. These projects are well distributed amongst various sectors: spinning and weaving received 25% of the company's non-financial investment; food processing 45%; transport 11%; and construction and housing 19%. Consequently, 28000 direct jobs were created. Participation in financial institutions totalled $5.8 mn, and guarantees were provided for $22.5 mn private loans. Between 1984 and 1987, and in accordance with economic stabilization and recovery programmes, the SDC confined its investment to on-going projects so as to raise their productive capacities through increased fixed and operating capital. Again following the Islamic legislation the corporation has adopted Musharakah and *Murabahah* as bases for its investments. In 1986, SDC extended funds for $1.8 mn and LS 3.6 mn, and in 1988 a total new investment capital of $2.1 mn and LS 40 mn was granted to 17 firms, mainly on Musharakah basis.

It follows from the above analysis that, the SDC was successful in promoting development activities in comparison to commercial banks. However, the additional funds mobilized for projects partly financed by the corporation seem to have

been met from investors' own resources or from other financial institutions, as there is no evidence of shares being issued. And it is, probably, for its dependence on official sources of finance that the SDC activities have shown a marked slowdown recently.

The need for wider public participation in development financing is manifested in the establishment of The Sudanese Rural Development Corporation (SRDC), akin of the SDC, in 1981. The SRDC consists of two subcompanies: a holding company, with a capital of Ls 7.5 mn paid by the government and some financial institutions; and a development bank, with a capital of Ls 10 mn paid by the government (40%), and European partners (60%). The main objective of the SRDC is to raise funds for small development projects in rural areas. Over the period 1981-84, the corporation had, partially, funded 16 projects for the sum of Ls 3.9 mn, and in 1986 and 1988, 24 projects were financed for a total of Ls 11.7 mn. There is no information on private funds being mobilized, but it seems that the company relied mainly on its meagre capital.

In contrast to the experience of the above corporations, the Islamic Development Company (IDC), which is a private company with similar objectives, has relied on public participation through the sale of shares. In addition to participation in development projects, the company's Act states its role in providing technical, managerial and other services to investors in various economic sectors(6).

The company started operations in 1983, with an authorized capital of $200 mn, but with the deteriorating investment environment in the country, the company raised just $25 mn as a paid-in capital and $0.6 mn in the form of shares. These together with retained profits grew at a low nominal rate reaching $30 mn by 1988.

Meanwhile, the company's contribution to long-term

investment rose from $2.9 mn in 1985 to a sizeable amount of $15.2 mn in 1988. Its short-term investment in the form of bank *Musharakah* and *Mudarabah* portfolios decreased from $22.5 mn in 1985 to $8.4 mn in 1988. By 1989 the company helped establish 15 relatively large scale development projects, and 8 medium and small size projects, besides extending funds to some existing projects.

It is clear that there is a notable shift in the company's investment orientation towards real investment, as against riskless and quick-yielding short-term investment. It has helped mobilizing funds through shares and through productive utilization of funds raised by investors. The IDC may play a more profound role in economic development if, given the nature of Islamic finance, real returns on financial assets come closer to those on real investment. Undoubtedly, a considerable boost to the company's work would take place if a securities market exists.

A common feature of development companies is their willingness to undertake risk, and their commitment to influence the allocation of development projects in favour of less privileged areas and activities, that are generally neglected by private individual investors. And this requires coordination of investment activities in order to avoid duplication of efforts.

2. Holding Companies:

All *Mudarabah* companies(7) have been found on Islamic principles, for the purpose of issuing and marketing shares, whose proceeds are then invested on short-term basis. But, they can use their capital and retained profits to make long-term investments.

The first of these, the Islamic Investment Company, was established in 1983 as a joint venture between the Faisal Islamic Bank (49%) and the Islamic Finance House of Geneva (51%). The volume of the company's shares and other

activities, perhaps, for confidentiality, is not discloseable. However, its assets rose from Ls 4 mn in 1984 to just Ls 4.3 mn in 1987, with sizeable net annual profits over the same period. Similarly, the Elruasi Islamic company[8] (1985) and Emigrants Islamic Company (1986) have also been active in issuing shares and extending short-term credits, whose exact volume also remains confidential.

The experience of *Mudarabah* companies is of recent origin, and is, therefore, difficult to assess. However, their shares are available to the public as well as financial institutions. Since they are not subject to the central banks' policy, they could form an outlet for banks suffering from excess liquidity due to credit ceilings, and siphon-off resources to finance short-term credit. Nevertheless, the relative publicity of *Mudarabah* transactions - usually of one-year maturity and involve non-tradeable shares - may indicate the willingness of the public to buy shares, which is necessary if a securities market is to be developed.

6.2.3 The Informal Money Market:

The observed concentration of formal banking services in major urban cities, entailed that informal money lenders are the only source of credit to rural producers. We consider below the rural credit market, in Sudan, in so far as it indicates the fragmented nature of the financial system, and the implications of this to economic activity in general, and monetary policy in specific.

Beshai (1976) noted that during the 1960s, the only source of credit to about 70% of rural producers was the "Shail" system, which is essentially a system of crop mortgage, under which the borrower pledges to sell in advance a certain part of his future crop in return for a loan from the village trader. Loans could be in the form of consumer goods or cash. This form of credit could be productive in as much as it

helps producers to meet their urgent seasonal consumption and production needs. But, it could also be counterproductive if it involves exorbitant rates of interest, or enables monopoly over rural output and prices, which appears to be the case in Sudan.

Excessively high rates of interest, however, are characteristics of rural money markets across LDCs, but their explanation is rather controversial. Bottomley (1975) attributes high rates of interest in rural money markets to: the opportunity cost of rural credit, taken as the rate of interest in urban riskless investment; the lenders' risk premium; high transaction costs; and monopoly elements. In a sample of 240 tenants/farmers in the leading agricultural schemes (Gezira and Rahad), Saleem (1984) found that 44% of them are engaged in "Shail" transactions. In a typical "Shail" arrangement, the lender receives the amount of crop pledged immediately after harvest and sells it at harvest prices, or latter when prices have risen. Saleem argues that the only plausible explanation of the too high rates of interest implicit in "Shail" agreements is in terms of power relations, monopoly and the corresponding undervaluation of borrowers' crops.

Money lenders are usually village' traders with high socio-economic and political status. They tend to have closer contacts with villagers, and advantages over them in terms of access to organized money markets, and knowledge of future crop output and prices. Sufficient knowledge on the part of the lender as to the borrowers' creditworthiness alleviates the need for collaterals, but restricts intervillage "Shail" transactions. Thus, "Shail" traders function as non-competing groups. Because of the personalized nature of the system and its articulation with various social and economic activities, the borrower is unlikely to default voluntarily, i.e, when his realized output exceeds the quantity pledged in "Shail".

In an otherwise situation loan repayment is normally rescheduled, and the flexibility of the system allows some tenants to be chronically in debt.

The economic implications of the rural credit market, and indeed the rural output market alike, are numerous. The monopoly nature of the system means that prices paid to producers by lenders or village traders are, in general, quite low, and invariant with market conditions elsewhere, e.g. in towns, let alone international markets. And with inadequate pricing, policies to increase output are meaningless to rural producers since they signal no incentive to them.

The magnitude of the rural money market is, however, expected to have been generally diminishing during the 1980s, not only because of the relative widespread of banks, but largely because of out-migration and marked increase in commercial businesses. On average at least one member of each extended family has had worked abroad, and this could mean an increased liquidity to the immediate family and soft loans to relatives. Moreover, with the rapid expansion of trading activities, the number of merchants at village level has risen, and the monopoly element is, therefore, expected to be less profound.

This, however, does not amount to saying that the "Shail" system would be self-liquidating. As official monetary policy is hardly transmitted to the rural money market, deliberate policies directed towards its gradual displacement may prove to be necessary. Such action should be part of a programme to integrate money markets for a more efficient mobilization and application of investible resources in connection with efforts to improve rural crop production and marketing conditions.

The concern of some private banks, e.g., the Sudanese Islamic Bank, with rural development should be encouraged to

create a new agricultural credit system as subsistence and rural producers may be induced to make surpluses if the present credit and product market conditions are changed.

6.3 The Case for a Securities Market in Sudan:

This section discusses the functions that a securities market may fulfill in the longer-term development strategies of a LDC, and advances a specific case for a securities market in Sudan. This case is based on the hypothesis that the essentially equity-based Islamic financial system may enhance the development of the market, which is, in turn, necessary for the former to meet its envisaged objectives. Further arguments and prospects of a securities market in Sudan are discussed in the following section, along with the Sudanese experience and measures for its promotion.

6.3.1 Scope, Nature, and Advantages of Securities Markets:

For the purpose of this study the term securities market[9] is used in Drake's (1980) sense to denote "the market for instruments/claims/obligations that are commonly and readily transferable by sale - namely the shares, debentures, bills, bonds, stocks..etc issued by companies or the government" (P.192). Thus, the market comprises the complex of mechanisms and institutions via which medium and long-term funds are harnessed and made available for use by businesses, government, and individuals. In the case of a securities market in an Islamic system, however, we discard[10] all fixed-interest-bearing instruments such as bonds.

The securities market consists of two segments: a primary market in which new securities are issued or underwritten; and a secondary market in which securities already outstanding are transferred or traded. The securities market is, generally, distinguished from the money market in that it

is the market for longer-term assets, while the latter is dominated by short-term assets of one year or less maturity. Nevertheless, most individuals, firms and institutions may be active in both markets, and this implies that decisions taken in either market necessarily incorporate expectations and predictions concerning the other. There remains, yet, an important difference between the money and capital markets in terms of the risk, return and liquidity characteristics of their instruments. Long-dated instruments, as against short-term ones, are usually more risky, less liquid, but promise higher returns.

It has, sometimes, been argued that since such financial institutions as commercial banks may hold both short-term and long-term assets and liabilities, there is little need for securities markets. And, as Drake (1977 and 1980) noted, it is commonly held[11] that such markets would be difficult to create, costly to establish and nurture, and of little economic benefit. While taking into account the merits and demerits of a securities market, we argue below that it should not only be viewed as complementary to the money market in an Islamic system, but also a necessary condition for it to be efficient.

Like financial intermediaries, securities markets play an important role in generating savings, but their potential for effecting economic development through real investment is substantially different. Through the issue of shares, debentures..etc, a securities market would help enterprises raise funds that would otherwise, and at the best, be put into less productive uses. It provides a mechanism through which returns on savings are related to expected yields[12] on real investments. This, notwithstanding accompanying risk increases, may result in a net increase in savings that are linked to profitable investments. The securities market would, therefore, foster the process of financial

intermediation, and "by widening the spectrum of investment alternatives, it is bound to produce allocational improvements over a system of segregated investment opportunities. Since it enlarges the financial sector, a securities market would widen the scope for specialization, division of labour, and reduction of costs in financial operations" (Drake 1980, P.196).

These considerations are, particularly, important in connection with the Islamic system, in which, and in the absence of such a market, each financial institution has to collect information on the economy as a whole and by sector when assessing or exploring investment opportunities. Hence, in the case of an Islamic system, a securities market would not only form an additional channel for investible resources, but also a pool of information that would assist large as well as small financial intermediaries to reduce their operational costs and function more competitively. Meanwhile, "securities markets need not be costly to run ..they entail relatively small advertising, clerical,..,and postage costs" (Drake, Ibid, P.196). Moreover, securities markets would enhance other functions envisaged in Islamic banking. The skills required for entrepreneurship have to improve across firms if they are to survive by means of resources raised in a world of competitive securities markets.

The securities market may provide the government with additional means of raising funds. In an Islamic system, where such instruments as bonds are illegal, the government may still be able to use the market to raise funds for projects whose returns are identifiable.

By enhancing the process of intermediation in general, the securities market may speed up the process of integrating formal and informal money markets, and increase the effectiveness of monetary and credit policies[13].

The above discussion, however, must not amount to

neglecting possible shortcomings of securities markets, especially in the context of LDCs. Securities markets may lead to an unequal distribution of wealth, encourage rash speculations with destabilizing economic effects, and give rise to dishonest practices such as false statements and insider dealing. However, these limitations may be contained through adequate regulations and genuine supervision by authorities. For example, wealth distribution may be favourably influenced by ensuring that the values of shares are affordable by average savers, and that appropriate tax policies are implemented. Another important objection to securities markets is that they may allocate funds to projects according to a financial criteria irrespective of their economic and social benefits, and that due to, e.g, inadequate information investors may still be biased in favour of shares issued by large and well-established firms as against new ones. These are significant issues that have to be carefully dealt with by the authorities to avoid allocational problems. Again, the authorities may through tax concessions or subsidies influence the flow of funds in the direction of projects that are, strongly, in line with national interests. But, such policies must not amount to manipulation of the market, or go beyond what is necessary to correct its inefficiencies.

6.3.2 Capital Market Theory and the Islamic Theory of Finance:

The risk and return features of the PLS system are at the centre of the debate over the Islamic financial system examined in the preceding chapter. But, the relationship between risk and expected return is also at the heart of capital market theory[14], or modern portfolio theory (Kitchen 1986, P.24). It is, therefore, not difficult to point out the similarities between the PLS system and capital markets. In

particular, we make the hypothesis that the solvency, liquidity, risk and return aspects of the main PLS instruments, namely *Musharakah* and *Murabahah*, are essentially the same as those of a securities market. Moreover, unless the present organization and structure of PLS institutions is supported by a securities market, they may not have any significant positive contribution to the process of intermediation and growth over conventional financial intermediaries; the ethical, and socio-religious fulfillment of being in conformity with Islamic tenets aside. We have already seen in the previous chapter that notwithstanding their relative success, Islamic banks, in Sudan, tend to have relatively higher operational costs than conventional banks. To demonstrate the hypothesis stated above, we discuss below the capital market theory, and its application to a PLS system.

According to Kitchen (ibid) the origin of the capital market theory lies in Markowitz (1952), who demonstrated that unless returns on securities are perfectly correlated, portfolio diversification reduces risk. Total risk was subsequently delineated into: Market or systematic risk, which cannot be reduced through diversification; and non-market or specific risk, which can be eliminated by diversification. Market risk results from factors exogenous to firms whose shares are being traded, and affect share prices as well as the whole economy in the same direction. The values of individual shares vary around a market average with high variability shares offering prospects of greater gains/losses as well as risk and vice versa. In contrast, specific risk originates from factors, such as product mix, managerial and technological innovations,...,etc, that are endogenous to firms.

Assuming an efficient market[15], i.e. a market which fully comprehends and reflects all available information, the

expected returns on diversified portfolios would depend on market risk, which is acceptable. For a single period, expected return, r, may be defined as:

(6.1) $r = (D+T-I)/I$

Where D represents dividends or assets; I and T are the initial and terminal prices of the asset, at the beginning and end of the period, respectively. On the assumption that investors use expected values of D and T, the expected value of T is given by:

$$\sum_{i=1}^{n} T_i P_i$$

Where T_i is the ith outcome of T, and P_i is the probability attached to that outcome; there are n outcomes, each having its own probability.

The theory, further, assumes that the riskiness of an asset may be measured by the dispersion of its returns, approximated by the standard deviation (σ) or by the variance (σ^2 , v) around its expected return. Moreover, possible returns are assumed to be normally distributed, and this precludes the possibility of a skewed probability distribution. The framework just outlined may be used to determine the relationship between expected return and total risk, as divided into market and non-market risk. Denoting the sensitivity of individual share prices to a change in overall market conditions by β, and specific risk by α , then the two types of risk may be estimated by the model:

(6.2) $y = \beta\chi + \alpha$

Where y is the return on an individual share over a certain period of time, and χ is the return on the market portfolio over the same period. Given α and β, the resulting correlation coefficient (ρ) indicates the extent to which

individual share price is correlated with the market average.

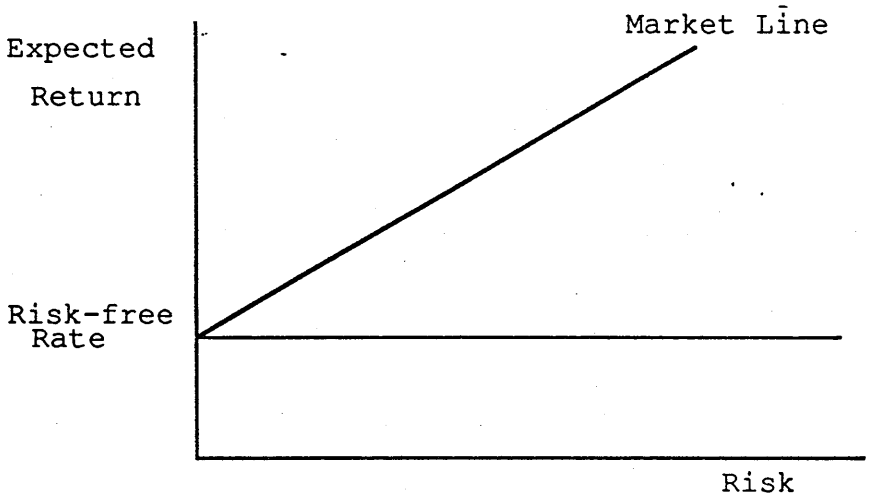
In the above equation only α is a choice variable for investors, since it can be influenced by portfolio selection or diversification. But, this depends on the availability of risk-free (albeit in a relative sense) investments or returns, which are usually provided by government securities or bank time deposits. The choice of a risk-free investment depends on investors' preference; long-term investments, as opposed to short-term ones, are, normally, less liquid, but promise higher returns/losses. In the presence of risk-free assets, the relationship between an investors's expected return and the accompanying risk may be demonstrated as in figure (6.1). At zero risk, the investor can obtain the risk-free rate of return, but as his willingness to take risk increases, so his required rate of return rises. The existence and shape of the market line, represented by the combinations of risk and expected return available to the investor, depend on the efficient market hypothesis. The relationship in figure (6.1) is known as Capital Market Asset Pricing Model[16], CMAPM. The behaviour of a risk-averse investor, the relationship between portfolio risk and return, and the position of the capital market line are also shown in figure (6.2) below. In addition, the figure shows the Efficiency Frontier (EF)[17], which represents the set of perfectly diversified portfolios giving the highest expected return for a certain portfolio risk. The risk-averse investor would select a portfolio along this line according to his risk-return preferences.

Provided the possibility of investment in risk-free assets, with a rate of return, r_i, and risky assets, with a rate of return r_a, the investor may wish to combine the two by putting a proportion X of his funds into the latter, and (1-X) into the former. Thus, his total return, r_t, will be:

(6.3) $r_t = r_a X + r_i(1-X)$

Figure (6.1)

Risk and Expected Return



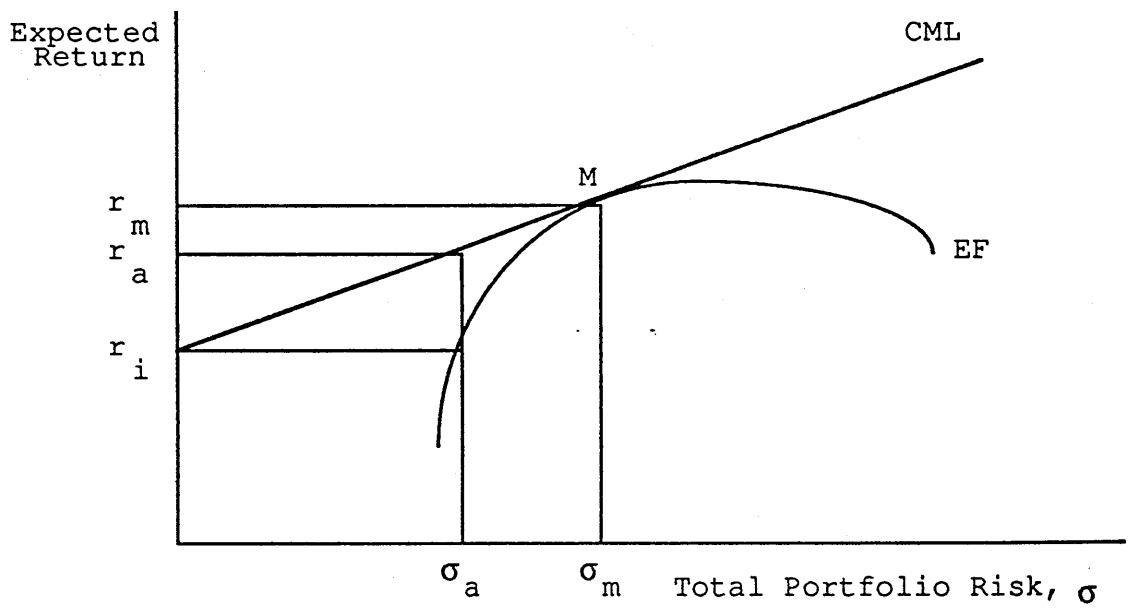
The investor's portfolio will be located somewhere along the line r_iM (the capital market line) depending on the value he attaches to X. The line must intersect the EF at some point (where X=1). But, since it reflects increases in total returns corresponding to some increases in risk, it is tangential to the frontier at the point of optimum risk-return combination (point M). The lender would at any point between r_i and M, maximize his expected return for the same level of risk, but only at M that an optimum risk-return combination may be attained. On the other hand, a borrower would be able to raise his risk-taking and expected return to a point beyond M, say point C. But, he will be above the EF, and would obtain higher return for the same risk he would take at D, a point on the EF.

This, however, is not the case in practice, where lending and borrowing do not take place at the same market rate; while the capital market line, r_iM, may approximate the lending rate, the borrowing rate would be slightly higher. In addition, it is possible, especially, for large and

institutional investors, to reduce, or even eliminate, risk even when there are no risk-free assets. This can be done through the simultaneous issue of risky assets and holding of risky liabilities, which generate hedged portfolios.

Figure (6:2)

The capital Market Line (CML)



The capital market theory is constructed as a tool for the analysis of the workings of capital markets in advanced countries. Leaving aside its relevance to LDCs, for a moment, we consider its application to a PLS system.

To start with, in a PLS system, the assumption of risk-free assets and returns has to be abandoned, since only investment deposits earn profits from productive investments, and portfolio hedging is at odd with the Islamic principle of risk-sharing. Portfolio diversification is only relevant in the form of risk pooling in the case of institutional investors. Therefore, the only alternative to risk-bearing

investment are cash balances, that have no real yield, assuming a zero rate of inflation. The portfolio selection for an investor in the PLS system would, thus, be between cash balances and PLS instruments. The risk and return combinations confronting an investor, and their implications may be demonstrated, with the use of the following notations and in the framework of a portfolio model[18].

Recalling the basic PLS instruments of investment, e.g., *Musharakah*, lenders and borrowers/entrepreneurs share expected profit/loss according to an agreed formula. Representing the average operating surplus resulting from entrepreneurial activity by π, and the proportion of this surplus forwarded to depositors in a PLS account[19] by q, the respective shares of depositors and entrepreneurs in total profits will be given by $q\pi$ and $(1-q)\pi$. Given total deposits, K, then the overall profit rate, Z, may be defined as $Z= \pi/K$, and returns to depositors, Z_d, as $Z_d=q\pi/K$. As in the capital market theory, the risk attached to an asset under the PLS system is given by the normal probability distribution of returns, σ, around their expected values. Assuming that total wealth, ω, put in deposits is forwarded for use by entrepreneurs, then total risk, σ_T, will be:

$$(6.4) \quad \sigma_T = \sigma\omega$$

And on the assumption that profit expectations are based on last year's profit rate, Z_{-1}, expected profit, Z_E, is given by:

$$(6.5) \quad Z_E = (q\pi_{-1})/(k_{-1})$$

Total expected return, R, would thus be:

$$(6.6) \quad R = Z_E\omega$$

From equation (6.4) $\omega=\sigma_T/\sigma$, and substituting this into equation (6.6), we obtain:

(6.7) $R = Z_E \sigma_T/\sigma$

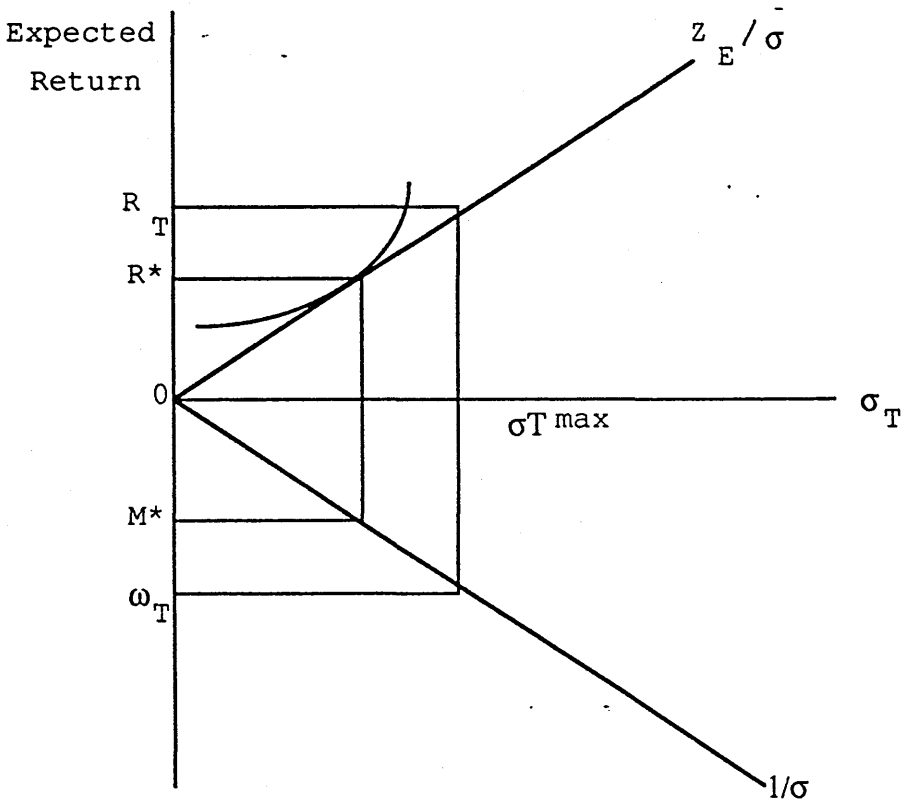
The information contained in equations (6.4) and (6.7) may be used to show the characteristics of the PLS system as in figure (6.3). The upper right hand quadrant shows the budget line representing the trade-off between risk and expected return (profit). The slope of this line (Z_E/σ) is obtained by differentiating equation (6.7) with respect to σ_T. The lower quadrant gives the degree of risk undertaken corresponding to wealth placed in PLS accounts. The slope of the risk-wealth line, $1/\sigma$, is obtained by rearranging equation (6.4) and differentiating with respect to σ_T. ω_T is the point at which all funds are invested in PLS accounts, with the corresponding total risk, $\sigma_T max$. Similarly, R_T gives the maximum expected return that $\sigma_T max$ corresponds to. A preference ordering for a risk-averse individual may be superimposed on the budget line. The point of tangency between the indifference curve and the budget line represents the optimal portfolio mix of money holdings ($M^*\omega$) and PLS accounts (OM^*). Corresponding to OM^* is OR^* the expected return to the lender/depositor.

In the above analysis, the supply of funds[20] to PLS accounts would vary positively with q (provided π_{-1}, and $Z_E=q\pi_{-1}/K_{-1}$). This is so because higher q would lead to a higher budget line, and shows more wealth being diverted into PLS accounts.

The analyses of the PLS system are based, among others, on the assumption that banks play a pure intermediary role. The validity of this assumption seems to depend on the existence of competitive markets, in which case there would be little difference between purely intermediary banks and non-intermediary banks. In practice, competition will reduce returns to non-intermediary banks to the level of costs plus normal profit, and this amounts to the administrative fees charged by pure intermediary banks.

Figure (6.3)

Risk and Return in a PLS System



Contrasting the position of individual investors under the PLS system and the conventional one, it is clear that the former is worse-off in so far as risk is concerned. The PLS system resembles a capital or securities market with no fixed interest rate, or risk-free assets. Thus, the PLS' investor faces both market and non-market risks. But, higher risk may entail higher returns, and the underlying preference functions of investors in the two system may be different. The PLS instruments may still maximize economic welfare if they attract a net increase in the supply of investible funds by devout Muslims. Meanwhile, there is no prior reason to suggest that borrowers would be worse-off under the PLS arrangements, as against the conventional system.

To conclude, there are arguably specific ethical and socio-

religious points for the PLS system, but there are no prior reasons for it to be more preferable than the traditional one, as judged on risk and return grounds. Moreover, since the PLS system is geared towards equity rather than debt-finance, there arises the problem of choice between long-term assets and short-term assets; the latter would be more limited[21]. As a result of the relative illiquidity of equity instruments the supply of funds to the capital market would be restricted if there is no market for outstanding PLS assets to be traded. Such a market would be needed to provide liquidity for holders of long-term investment instruments who wish to sell them before maturity. Thus, the analysis in this section lends support to our previous argument that while the nature of the PLS instruments makes it similar to a primary securities market, the existence of a secondary securities market appears to be a pre-requisite for it to be successful. We discuss below the relevance of the capital market theory to LDCs.

6.3.3 Capital Market Theory and Developing Countries:

In reviewing empirical tests of the capital market theory in developed countries, Kitchen (ibid) concluded that the results of the tests have, at best, been ambiguous. Capital markets[22] are relatively efficient in some of these countries, but not in the sense embodied in the efficiency assumptions. Nevertheless, the principle of portfolio diversification and the linear relationship between risk and return remain widely accepted. Samules (1981) identifies the sources of securities markets' inefficiency with: (1) inadequate number of traders to ensure competition and insufficient number of securities to enable portfolio diversification; (2) different risk preferences of investors, and thereby lack of uniform response to market changes (this is not necessarily a drawback as investors with different

risk preferences can choose different points along the capital market line); (3) inadequate market regulations and standard of disclosure by companies; (4) poor communication facilities, which result in costly and limited access to information; and (5) lack of competent analyst and professional advisors, resulting in differing predictions about market performance.

The repercussions of all these types of inefficiencies are that capital markets are less likely to be efficient in LDCs. Yet, Kitchen (ibid) concludes that the capital market theory may provide a guide to capital markets in developing countries. The principle of investment diversification may lead to an improved project choice, and international portfolio selection may be relevant to financial institutions operating in LDCs. But, volatile inflation and interest rate control may have profound adverse effects on capital markets in these countries. A more fundamental problem in countries whose scarce resources are desperately needed to be productively utilized is the potential conflict between financial efficiency and economic efficiency.

A financially efficient market is one in which prices reflect all available information, whereas an economically efficient market is the one that allocates resources in a Pareto-efficient way, i.e., no one can be made better-off without someone else being made worse-off. If other markets are distorted a perfectly efficient capital market may not lead to an economically efficient allocation of resources. This possible divergence between financial and economic efficiency results from differences between private and public interests, and may only be mitigated by government action that carefully observes the balance between the two.

It follows from the above discussion, however, that market efficiency is not a solid criteria in determining whether or not securities markets should be promoted in a particular

country. As Keane (1985) argues "there are no significant assumptions upon which the validity of market efficiency depends....It is not conditional upon there being a certain proportion, let alone a majority of skilled investors....The only assumption that the theory may be said to depend upon is that it is possible, notwithstanding the existence of naive investors, and despite the activities of speculators and claims by analysts that they possess superior skills, that the market is, nonetheless, successful in generating prices that instantaneously and correctly capture all new information", (P.13).

This possibility, as the theory asserts, is amenable to verification only by rigorous empirical analysis. It is our point that there is not a prior reason for securities markets not to be efficient, in some sense, in LDCs, or they should not be developed for the latent fears of inefficiency. But, there are certain limiting factors that ought to be considered in assessing the potential for a securities market in a LDC. The main of these factors relate to the supply of, and demand for securities.

On the supply side, the types of ownership of economic enterprises and the traditional financing patterns may present serious challenges. Large firms are usually owned by governments or foreigners and may not welcome public participation unless asked by the authorities to do so. At the same time, endogenous private enterprises are normally family-owned, and tend to be small in size. Such firms also tend to have a limited scope for expansion and fear participation by outsiders to protect family or minority rights. While local firms may rely on self-finance, given low costs of borrowing in LDCs, entrepreneurs in general would prefer institutional finance.

In an Islamic financial system, however, the cost of borrowing is likely to be in line with returns on shares, and

financial institutions providing credit would act as participants. Firms may, therefore, be encouraged to issue shares instead of relying on debt-finance in their expansion strategies. Yet, possible constraints on the supply of securities, resulting from the type of ownership may persist.

On the demand side, there are prior reasons, according to Maniatis[23] (1971), in believing that the demand for securities would be limited in a LDC. Firstly, individual savings accrue, mainly, to financially unsophisticated people, who may only through a protracted process of learning consider dealing in a securities market. Secondly, shares ownership may only be attractive to individuals with high incomes, and capable of making diversified portfolios. Thirdly, the generally underdeveloped financial system means that there would be a limited institutional demand for securities. Fourthly, price uncertainty reinforces the traditional preference for money over financial assets. Finally, accurate information is scarce and costly to obtain, with the result that securities holding may be extremely risky.

In a counter argument, Drake (1980) concludes that there is no enough empirical evidence to support the first four points, and that the experience of some developing countries, namely Singapore and Malaysia, seems to refute Maniatis' case. Nevertheless, the scarcity of information and regulations are important problems that merit careful attention by the authorities in LDCs. In fact, as Parkinson (1984), who investigated the issue behaviour of companies quoted in the Nairobi Stock Exchange over the period 1974-78 suggests, demand side problems in LDCs have been exaggerated. He notes that:

> "Kenya has a supply of savers who are willing to invest in corporate securities, but who cannot find sufficient investment opportunities....In almost every case the

issues have proved to be sufficiently attractive to be fully subscribed...*Hence* companies could make more new issues available to investors, with every expectation of success" (Italics added), P.371.

It is conceivable that the aforementioned factors are likely to be less potent to constrict demand for securities in an Islamic context. Islam discourages hoarding, by making its holders liable to a religious tax (*Zakat*), and this may induce savers to seek financial or other investments with positive nominal returns. As far as risk and return are concerned there may be little difference between high income and low income savers; differences would arise only in terms of diversification within risky assets, and cost of portfolio management. Substantial risk reduction may not be possible, as there are no risk-free investments in the PLS system. But, since real investment and profit-making are the primary concern of Islamic financial institutions, institutional participation in a securities market is likely to be high. The marked participation by Islamic banks in investment and holding companies may be an indication of this.

Prices uncertainty is a problem to reckon with in any way, particularly if prices are highly variable. Finally, the information problem is one of substance, but it is in the interest of all Islamic financial institutions, which would otherwise invest individually on information gathering, to support or establish a central mechanism for collecting and disseminating economic information.

6.4 Prospects of a Securities Market in Sudan:

This section summarises the main arguments for a securities market in Sudan, discusses Sudanese attempts at its promotion, considers recent socio-economic and legislative developments that could influence its progress, and suggests measures for its gradual implementation.

6.4.1 Summary of The Arguments for the Securities Market:

Apart from the general benefits from securities markets in LDCs, the following arguments for a securities market in Sudan emerge from the preceding discussion.

1. It has been shown that the risk and return characteristics of the Islamic financial system are, essentially, the same as those of a conventional securities market supported by a limited financial market. Therefore, the arguments for Islamic banking would, generally, apply to the case for a securities market.
2. To enhance the liquidity of Islamic banks, and holders of long-dated or investment deposits, we pointed out that there need to exist a market in which such financial assets as investment certificates may be traded. This gap in the Islamic financial system may only be bridged through the development of a secondary securities market.
3. As we have indicated in this and the previous chapter, by virtue of their operations, Islamic financial institutions have to be in close contact with the real economic activities they finance. Therefore, individual banks will have to invest considerably in collecting information concerning these activities. The presence of a securities market may provide a pool of information that would help banks and other financial intermediaries to reduce their operational costs.
4. Since, the securities market may help integrate real and financial sectors, it may reduce general costs leading to both financial and economic efficiency improvements.
5. The activities of development and holding companies provide an encouraging example of the possibility that share companies may be successfully developed. However, at the present *Mudarabah* companies represent sources of funds outside the domain of monetary and credit policies. If a securities market exits, the activities of these companies

will be part of it, and may thereby be properly regulated. Accordingly, public and private equity will cease being traded on an adhoc basis.

6. Though it is not clear how the proposed securities market, and indeed the present Islamic financial system, can deal with the problem of public deficits' financing, the securities market would help raising funds for public investments with identifiable returns. And this will ease the government budget and release resources for other social investments.

7. Finally, there are reasons to believe that a securities market would attract foreign equity capital, particularly from rich Arab nations. Private Arab funds, for instance, have contributed substantially towards the establishment of the largest sugar production scheme, and the second largest agricultural scheme. And muslims from outside the country hold, among other financial investments, 40% of the Faisal Islamic Bank's capital, and 51% of that of the Islamic Investment Company. Besides, Sudanese nationals working abroad form a large class of relatively wealthy individuals, the majority of whom may not be able to undertake investment on their own, and for whom buying company shares, e.g., might be an attractive type of investment.

6.4.2 Sudanese Attempts at Establishing a Securities Market:

The Sudanese practical experience with share dealings as a step towards a securities market began in 1966, with the issue of government bonds for the value of Ls 15 mn. The objective was to raise medium-term and long-term funds to finance development projects. In the following year, national defense bonds were also issued, and a stock exchange committee was set up. The committee considered giving the leading role, in this respect, to financial institutions.

But, it was concluded in 1968 that due to their structure, strategies, lack of qualified cadre, .etc, these institutions were not prepared to mobilise resources through a stock market. Public participation was expected to be limited mainly due to its primary concern with liquidity and quick-yields. It was also reported that government and family-owned enterprises represent the main form of ownership at that time (Lees and Brooks, 1977), and that the shares of only 5 companies were distributed widely enough to be transacted. Instead of a stock exchange market, the committee recommended the establishment of the Sudanese Savings Bank as a channel for development funds, besides a department for government securities. With rising public deficits and foreign debt servicing, the securities department continued issuing government stocks and bonds, held mainly by financial institutions, in addition to treasury bills.

Be that as it may, the stock exchange committee was less enthusiastic, and lacked government support, as may be deduced from its inability to act upon simple policy areas as the development of a legislative framework for the market, which can provide an umbrella for private initiatives. Indeed, the idea of the market came to a complete halt with the 1970 nationalization Act. Since then the largely government - controlled financial sector responded passively to its demands for credit on its own terms. Government securities and bonds issued at various times were to be automatically renewed as they reach their maturities(24).

Between 1966 and 1983, the central bank accustomed to hold non-transferable treasury bills for a constant annual amount of Ls 13 mn, which was raised to Ls 29.1 mn as from 1984 onward. Commercial banks also used to hold government bills for a constant annual total of Ls 5.1 mn between 1966 and 1975. This together with treasury bills, which banks started holding in 1976, increased to Ls 55.7 mn over the period

1976-1984, and to Ls 60.3 mn from 1985 onward. Government bonds held by the public maintained an annual average of Ls 5 mn between 1978 and 1985, but fell dramatically since then. This was presumably due to their falling real returns, and the adoption of Islamic principles of finance.

In 1975, a secretarial office for a stock exchange market was set up within the central bank. Not surprisingly, it took the office 7 years to prepare the Stock Exchange Act, which was passed in 1982. The Act stipulated that a primary and secondary securities market will be developed, and that all financial institutions shall subscribe to its capital of Ls 300,000. It has also referred to measures to be taken in order to promote and protect the market. These included adequate legislation, listing rules, disclosure principles, and encouragement of professional brokers.

Again the laxity with which the Stock Exchange Act was brought forward continued to shadow its implementation, and the Act as well as the office were overtaken by subsequent developments, of which the 1983 Islamisation measures are paramount. "It was not clear by 1989 that the office was formally dissolved or spontaneously faded out"[25]. Before considering the necessary steps for making the securities market a reality, we discuss below these socio-economic and legislative changes, and the likelihood of their impact on the progress of the market.

On the economic front, we have already seen in chapter 3 that the economy was actually retrogressing with massive public deficits and soared inflation. Public as well as private companies depended heavily on bank credit, while most of them were operating below the break-even point. Indeed, some companies ceased operations and still obtain bank loans under government pressures, and many public enterprises have had their short-term loans being transferred into long-term credits due to repayment problems. The denationalization era,

however, witnessed widespread privatization, and with trade and foreign exchange liberalization in the late 1970s, private enterprises flourished with marked foreign participation. The number of firms operating in the country was believed to be about 6,000 (Stock Exchange Act 1982). But, with deteriorating general economic conditions, and continuing dominance of family-based ownership, few of them may qualify or opt for dealing in a securities market.

Over the last two decades many social changes occurred, with marked effects on individuals attitude and behaviour. Among these factors are rapid economic changes, internal and external migration, and rising literacy rate. For fears of the future, widening wants and aspirations, individuals are becoming increasingly concerned with achieving personal economic targets. As a result, the drive for profit-making and wealth accumulation has been accentuated, and economic and commercial dealings are no longer based on complete confidence, as before, but rather on legal contracts in order to secure ownership and rights. Another related phenomenon, as we noted in chapter 3, is the prevalence of informal economic activities, such as black marketeering. The exact extent of the "underground" economy is unknown, but it is believed to be substantial relative to the whole economy. This, of course, squeezes organized markets, and together with other factors suggest that there is a high need for legal structures and organization so as to regulate economic activities, before a securities market can be developed.

The most important legislative change is the adoption of Islamic *Sharia* code in 1983, and the economic dimension of this is represented by the abolition of fixed interest rates in all internal formal financial arrangements. The traditional form of securities markets is based on interest rates, shares excepted. The issue and trading of shares is in harmony with Islamic injunctions, preference shares apart.

Moreover, as the adoption of compensatory interest rates in 1987 may indicate, the authorities may allow such a means if necessary for the functioning of the securities market.

There have been no other economically important legislative developments. The 1925 company Act and the 1982 Stock Exchange Act remained intact. But, as we have seen before, the central bank Act was amended several times as to remove constraints on government borrowing; some short-term bank credit to the government have been rescheduled over 94 years. To the extent that bank loans are easily available to the government it has little incentive to resort to financing through a securities market. However, provided the economic impact of excessive deficit financing, this position is bound to change if the political system has any responsibility towards economic stabilization and growth.

To conclude this section, in the unstable political and economic environment in Sudan, the idea of a securities market could only be put forward as part of a package encompassing measures to stabilize the economy, and set up a macroeconomic framework for future policy action. Nevertheless, the importance of this market remains, at least, as far as, the Islamic financial system is maintained. (Parkinson's remarks about the stock exchange market in Kenya, which is in a comparable stage of economic development with Sudan, provide an encouraging example.) And this implies that the securities market should be gradually implemented, but total commitment on the part of the authorities, institutions, and industrial associations is vital.

6.4.3 Measures to Promote the Securities Market:

The prospects of the securities market would depend, largely, on political stability, moderation of inflation and exchange rate fluctuations, and clear development strategies both in the private and public sectors. These conditions are,

in one way or another, necessary for the economy to grow. Apart from that, the starting point of the gradual process of implementing the market is the development of a legal and administrative framework, besides an efficient information system. This is necessary in order to evaluate potential supply and demand for securities, and to spread the idea of the market amongst potential participants. Banks and other financial institutions ought to be convinced and persuaded to subscribe substantially to its initial costs, and at the same time, be given reasonable freedom under competitive conditions. The companies operating at losses should no longer be protected via cheap loans, but exposed to competition if they can survive, or otherwise be liquidated. Moreover, the investment and share companies Acts ought to be harmonized. Pricing of shares, and output alike, should, in general, reflect changes in the underlying market conditions.

At the initial stages of the market, however, adequate involvement of the authorities may be required as to protect it against wide fluctuations in prices. It may be necessary to be ascertained that shares, e.g., maintain their nominal values, and that in the event of oversubscription, individual share values are sufficiently lowered to allow a more wide distribution of wealth and income. It may be particularly necessary to take firm measures for effecting the supply of, and demand for securities.

Measures to induce the supply of securities would include the following. Firstly, widening of the ownership of public sector's companies, which may still be 51% government controlled if that is necessary for distribution of income and wealth without impairing their economic standing. The financing of new development projects should be through the market as far as it is possible. Secondly, broadening of the market infrastructure by such means as shares insurance, and guaranteeing of the nominal values of shares. Thirdly,

regular assessment and publications providing information about firms and operations of the market. Finally, the evolution of share companies in recent years needs to be properly encouraged.

The following measures may favourably influence demand for securities. Firstly, tax concessions for profits on shares, and encouragement of share companies to allocate adequate portions of their profits to shareholders. Secondly, stabilization of the exchange rate so as to make securities attractive to foreigners. Thirdly, ensuring monetary stability is necessary for investment projection and predictions about the market.

To reduce risk, information officers and market analysts should be legally bound to give a clear picture to all participants about developments in the market. And to enhance the degree of liquidity for the market as a whole, the secondary market should be properly developed. Furthermore, it may be appropriate that banks make credit on shares guarantees.

In short, the creation of a securities market can only be perceived as part of efforts to reconstruct and develop the Sudanese economy. But, with the evolution of the Islamic financial institutions, the securities market is not only important for the whole economy *perse*, but particularly necessary for the well-functioning of these institutions.

6.5 Summary and Conclusions:

The objective of this chapter has been to examine and assess the performance of non-bank financial intermediaries, and to analyse the need and prospects for a securities market in Sudan. The analysis suggests that though insurance companies have come to play an important role both as providers of security services and as financial intermediaries, their activities, particularly lending, have

been tightly restricted by government policies. Moreover, the operations of these companies have also been adversely influenced by the abolition of fixed interest rates, without suitable alternative investment outlets. Therefore, it is not surprising that within the limited freedom they enjoyed, insurance companies have tended to invest mainly in real property.

Besides enhancing the process of financial intermediation in Sudan, the experience of development and holding companies indicates the willingness of the private sector to invest in shares, and to play a more profound role in economic development. But, the activities of these companies, like those of banks, are largely limited to urban domains, and the informal money market still seems to be an important source of credit to rural producers. With the recent developments in the financial sector, there is a need as well as a possibility for a securities market to be developed. It has been argued in the chapter that the Islamic financial system is essentially a form of a securities market, whose legal and administrative structures are yet to be developed. But, the existence of the latter is a prerequisite for the former to be well-functioning.

The development of the securities market, however, ought to be linked to economic stabilization and development strategies, and be gradually and carefully pursued, but with total determination, which appeared to be lacking in previous attempts.

Notes:

1. There is a pension fund, whose operations are not covered, here, because of data unavailabilty.
2. For Such aspects as principles of insurance see e.g. J. Revell (1973), PP.401-443, and Siddiqi (1985b).
3. Two of these companies were established on Islamic principles, but at the present time all of them are asked to comply with these principles.
4. Ministry of Finance: The economic Survey (1987/88), P.195,
5. This includes co-insurance debts and indirect business from ceding companies.

6. The Islamic Development Company Act (1983), P.5
7. These are the Elruasi Islamic Company, the Islamic Investment Company, and the Emigrants Company.
8. The public office of the company refused to disclose information relating to its operations.
9. The securities market is a narrower concept than the capital market. For a further discussion of concepts and terminologies see, e.g., A. Gart (1988).
10. This, of course, implies that the securities market in an Islamic system is narrower than the conventional one.
11. For a survey of economists views see Kitchen (1986).
12. This assumes away market distortions such as monopoly.
13. It provides a mechanism for the use of such monetary instruments as open market operation. But, again this may not apply in the case of the Islamic system, and will be discussed further later in this chapter.
14. The term capital market is used as synonymous to securities market as defined above.
15. For markets to be efficient in a financial sense, the theory asserts that there should be:(1) no transaction costs;(2) freely available information to all participants;(3) agreement among market agents on the implications of available information on the current and future prices, risks and returns of securities;(4) all investors are risk-averse, i.e.. maximize return for a given risk and vice versa; and (5) a large number of traders and securities so that balanced portfolio selection is possible.
16. For further discussion see Kitchen (1986), PP.35-37.
17. The EF shows combinations of risk and returns from a given set of securities. Only the points along the EF are both attainable and efficient.
18. The basic features of the model below are due to S. R. Khan (1987), whose concern was to analyse the risk and return aspects of the PLS system. The point of departure, here, lies in the contrast between the PLS system and the conventional capital or securities market.
19. This assumes that banks play a purely intermediary role.
20. The supply of loanable funds (S) is a function of σ and Z_E, i.e. $S=f(\sigma, Z_E)$; $\Delta S/\Delta Z_E>0$., while demand (D) is a function of q and P_E, with $Z_E=(1-q)\pi_{-1}/K_{-1}$, besides other factors such as technology, product mix,...,etc.
21. Because their returns are difficult to identify - see chapter 5.
22. Among many capital markets in both developed and developing countries, only London, New York, and Tokyo markets are fairly efficient (Samules, 1981).
23. See also Samules and Yacout (1981) for similar observations.
24. Bank of Sudan Annual Reports, various editions.
25. Stock Exchange Committee Report (1989), Bank of Sudan, Khartoum.

CHAPTER 7

MONEY, CREDIT AND THE REAL SECTOR: AN EMPIRICAL MODEL OF THE SUDANESE ECONOMY

7.1 Introduction:

It has been argued in chapters 1 and 2 that changes in monetary variables may influence real variables in the economy. In chapter 4, the Granger's causality test indicated a supply-leading role for monetary growth in Sudan. But, it was also maintained that monetary expansion in Sudan was largely the result of increasing government deficit financed chiefly via borrowing from the central bank. This was particularly the case since the late 1970s, a period during which inflation rates soared, while the average real growth rate was negative.

There is a good deal of literature(1) that suggests that money created to finance government expenditure, or inflationary finance, may induce economic growth by raising the rate of investment. But, far from promoting growth, high and unstable inflation rates may have rather destabilizing effects. Particularly with fixed nominal rates of interest this may lead to financial disintermediation by lowering demand for financial assets, and reversing the process of monetization, with adverse effects on the saving-investment process. Moreover, disequilibrium interest rates would entail non-price credit rationing, leading to misallocation of investible resources.

We have already examined the role of monetary and financial institutions in resource mobilization and utilization, besides the structural and institutional factors influencing them (Chapters 4-6). Taking into account the basic features of the Sudanese economy, this chapter attempts to construct and estimate a macroeconometric model using data for the

period 1960-88. The main aims of the model are:

1. To provide quantitative information on the behaviour of key monetary variables.
2. To test the major hypothesis on finance and growth by examining quantitatively the link between the financial and expenditure sectors of the Sudanese economy.
3. To evaluate, through simulation experiments, the relative effectiveness of major policy variables in the process of economic transformation and development.

As far as we know, no such attempt has been made with respect to Sudan, though several single equation models have been estimated(2). An exception is Omer and Ahmed (1985) who developed and estimated a macroeconomic model for Sudan, in which the monetary sector is not explicitly modelled. However, there is a good number of macroeconomic models that explicitly incorporate the financial sector. But, most of these models(3) have been constructed and tested in the context of developed economies, with interest rates playing a major role in the transmission mechanism, or the link between the monetary and real sectors, as a common feature. Under conditions of interest rate fixing and other constraints in the financial market in LDCs, interest rates may not play a significant role in the transmission mechanism. Therefore, a more direct process of transmission is required. Theoretical models of the direct transmission process date back to, notably, Johansen (1958) and Shapiro (1966), but again such models have rarely been applied to developing economies(4).

In the model of the Sudanese economy to be specified in section (7.2) below, there is credit-rationing because of below equilibrium rates of interest, while government borrowing from the central bank provides the main stimulus for changes in high-powered money. In this section the model is specified equation by equation. The complete model and its salient features are presented in section (7.3), whereas

section (7.4) discusses the estimation techniques and structure, and reports and analyses the results of the estimated equations. In section (7.5), the model is simulated, various policy experiments conducted and their implications analysed. The main estimation and simulation results of the model, and their implications will be further considered in the following chapter in connection with the major findings of other chapters.

7.2 Formulation of the Model:

7.2.1 An Overview:

The model places emphasis on the implications of changes in reserve money, and credit on the rest of the economy. It is Keynesian in spirit in that output is demand-determined, while attempting to incorporate the main features of the Sudanese economy in general and the financial sector in particular. These features include:

1. Changes in reserve money are determined largely by government borrowing from the central bank, where government borrowing from deposit banks and the non-bank private sector is negligible. This is so because there is no, or extremely limited, primary market for government or private securities, while secondary securities markets are yet to be conceived.
2. There is no direct lending by the government or the central bank to the non-bank private sector.
3. Interest rates are administratively determined, normally below their market-clearing levels, resulting in non-price credit-rationing. Accordingly, credit availability is one of the determinants of aggregate expenditure.
4. There is strict control over exchange rates, foreign exchanges and foreign capital movement.

The Sudanese financial system is based on the banking sector, whose liabilities form the bulk of financial assets

in private portfolios. Deficit spending units finance their expenditures chiefly through retained earnings and borrowing from banks. As noted in chapter 4, in this economy the authorities use directives or quantitative measures to implement monetary policy. Further properties and assumptions of the model will be elaborated in the discussion below, but one basic deficiency of the model needs to be highlighted. The model is built around the modern exchange sector, and does not account for the unorganized money market because of lack of information.

Throughout the rest of the chapter, the symbol Δ indicates change in, or flow of, a variable over period t, and is measured as the difference between end of period stocks in the present and previous periods. All relevant variables are measured in current domestic price and the real value of each variable is obtained by dividing by the appropriate price deflator(5).

7.2.2 The financial sector:

(1) Money supply: The stock of money in the economy (M) is the sum of total bank deposits (TD) and currency outside banks (C):

(7.1) $M_t = TD_t + C_t$

Where TD comprises demand deposits plus time and saving deposits in period t. According to the equation above, money supply is demand-determined.

The stock of reserve money (RM) may be defined as banks' reserves, which consist of banks' deposits with the central bank plus vault cash, plus notes and coins in circulation with the public plus government deposits with the central bank. But, the stock of reserve money, which is the liability of the central bank, is by definition equal to its assets. The latter comprise central bank lending to the government (CBLG) and to banks (CBLB) plus foreign exchange reserves

(F). Thus, the flow of reserve money may be expressed as:

(7.2) $\Delta RM = \Delta CBLG + \Delta CBLB + \Delta F$

The flow of foreign reserves into the central bank is determined by the balance of payments position, and net foreign capital flow (Fc), that is:

(7.3) $\Delta F = EX - IM + \Delta Fc$

Where EX is the value of exports of goods and services; IM is total imports value.

According to equation (7.2) changes in reserve money may be considered as the result of a combination of fiscal and monetary policies. However it is to be expected from the discussion in chapters 3 and 4 that ΔCBLB is of little or no significance as a policy variable. It remains in the equation, therefore, that ΔCBLG is the main source of increases in RM, with foreign exchange reserves flow playing a mitigating function. Furthermore, while ΔF, which reflects balance of payments objectives, may hardly be used as a policy instrument, central bank lending to the government adjusts passively to its budget deficit (see equation 7.18 below).

(2) Demand for Monetary Assets: We disaggregate demand for financial assets by the non-bank private sector into currency and bank deposits. This disaggregation is necessary because the two types of assets may be substitutes; currency as opposed to deposits does not earn interest or profit income. Therefore, we assume that deposits will be preferred to currency holdings as a form of savings. Moreover, it is important in our model to study the demand for currency, which is a component of reserve money, separately, because the less of high-powered money held outside banks the greater the credit extension on a given stock of it (see equation 7.6 below).

Demand for currency is essentially a stock demand. We relate demand for currency in real terms (C/P) to real income (Y/P_g), and the opportunity cost of holding currency as represented by the deposit rate of interest (rd). Thus:

$$(7.4)\quad \text{Log}(C/P)_t = \alpha_0 + \alpha_1 \log(Y/P_g)_t + \alpha_2 rd + \alpha_3 D78 + \alpha_4 \text{Log}(C/P)_{t-1}$$

Where P and P_g are the consumer price index and GDP deflator, respectively. The income coefficient is expected to take a positive sign, while that of the interest rate would be negative. We believe that currency holdings may also be influenced by factors other than those already in the equation. For example, as the banking sector expands, currency may be partly replaced by bank money as a form of payments, and accordingly demand for C decreases. In the empirical literature, the number of banks' branches is usually used as a proxy for development in banking services. Unfortunately, we do not have enough data on this variable. However, we include D78, which is a dummy variable intended to capture the possible impact of Islamic banks on currency demand. As Islamic banks, which were incorporated as from 1978, may encourage the use of banking facilities by those who may have religious inhibitions concerning the use of conventional banking facilities, the coefficient α_3 is expected to have a negative sign.

Demand for deposits is also a stock demand. We assume that the stock of deposits is determined by the banking system by its credit expansion as follows:

$$(7.5)\quad TD = R + L - CBLB$$

There is, however, a certain long-run relationship between assets' stock and private disposable income, and equation (7.14) below ensures that this long run relationship holds.

(3) The flow of bank credit: The behaviour of

commercial banks may be examined in terms of their lending activities and the reserves ratio. The flow of reserves (R) into commercial banks, at any particular point in time, is given by the flow of high-powered money[6] less currency held by the non-bank private sector. That is:

(7.6) $\Delta R = \Delta RM - \Delta C$

The flow of total bank credit (ΔL) to the private sector is determined by the following identity:

(7.7) $\Delta L = [(1-ARR)/ARR]*\Delta R + \Delta CBLB + \Delta NOL$

Where ARR is the average reserves ratio, which is equal to the sum of the required reserves ratio (RRR) and free reserves ratio (FRR). The term in brackets is the credit multiplier[7]. It has been assumed that the flow of central bank credits to commercial banks is relent to final borrowers. These loans are exogenously determined according to the extent of credit rationing, and in particular the credit requirements of priority sectors such as irrigated agriculture. ΔNOL accounts for the flow of net other loans by commercial banks, including forced lending to the government.

Having defined the credit multiplier in terms of ARR, we then need to explain the behaviour of this ratio. With a stable stock of deposits, and a relatively well developed interbank market, commercial banks may be assumed to hold reserves for transaction purposes only. Moreover, since the banking sector in Sudan was dominated by government-controlled banks over most of the period considered, it was easy for banks to buffer unexpected falls in reserves by borrowing from the central bank, and, thus, precautionary need for reserves was minimal. Under these conditions, the required reserves ratio may well explain both the forced reserves ratio and the free reserves ratio. Therefore, the equation for ARR may be specified as:

(7.8) $ARR = \alpha_5 + \alpha_6 RRR + \alpha_7 rl + \alpha_8 D78$

Where rl is the lending rate representing the opportunity cost of keeping reserves, and, hence, α_7 would have a negative sign. Transaction deposits of Islamic banks have, in theory, a 100% reserves cover, and, therefore, D78 is employed in equation (7.8) to capture the effect of this on ARR after the incorporation of Islamic banks in 1978. Meanwhile, credit policy was also tightened as from 1984 onward. But, in either case, the coefficient of D78 is expected to be positive. In general if banks wish to hold, on average, a fixed free reserves to deposits ratio this will be reflected in the parameter α_5 taking on a larger value than unity. The coefficient α_6 is expected to be positive and highly significant.

It is to be noted before closing this subsection that because of credit rationing regimes, the quantity of credit available at any time is determined by suppliers of funds.

7.2.3 The Inflation Equation:

To explain changes in consumer price, we employ a function similar to the one developed by Laidler (1975), and applied in several subsequent studies. Consumer price inflation is assumed to depend on the expected inflation rate (Π) and the level of excess demand in the economy. Excess demand is measured by the difference between actual real output (Y/P_g) and potential real output $(Y/P_g)^*$. Thus we obtain:

(7.9) $\Delta \text{Log } P_t = \alpha_9 + \alpha_{10}[\text{Log}(Y/P_g) - \text{Log}(Y/P_g)^*] + \alpha_{11}\Pi_t$

Where potential output is obtained by regressing real actual output on a constant and trend variables. Both α_{10} and α_{11} would have positive signs. Under conditions of zero excess demand in the economy, the actual rate of inflation will depend on the expected one.

Expectations are assumed to be adaptive in the sense that in each period people form their expectations in the light of their present and previous experiences. Variation in the expected value of a variable is a positive function of the difference between its expected and realized magnitudes. Following Cagan (1956), the expected rate of inflation in period t may be measured as follows:

(7.10) $\Pi_t = \lambda \Delta P_t + (1-\lambda)\Pi_{t-i}$

If expectations are fully realized, then the expected and actual rates of inflation will be equal. In practice, however, Π may be generated as a three years moving average, or a distributed lag of measured inflation.

7.2.4 The Expenditure Sector:

Demand for real output is the sum of real private expenditure, government expenditure and net exports:

(7.11) $Y/Pg = PC/P + PI/P + GE/P + EX/Px - IM/Pm$

Where Y is Gross Domestic Product[8]; PC and PI are private consumption and investment expenditures respectively; GE is total government expenditure; EX denotes exports, IM is the domestic currency value of imports; and Px and Pm are export and import prices, respectively.

Turning to the components of aggregate demand, we attempt to explain the behaviour of the private sector in equations (7.12) and (7.15), which embody, among other things, the effects of financial conditions on real private expenditure. The two equations attempt to capture the influence of credit availability on private consumption and investment, but the investment equation also tries to account for the complementarity hypothesis by incorporating real private financial assets as a regressor. The consumption function is specified as follows:

$$(7.12)\quad \text{Log}(PC/P)_t = \alpha_{12} + \alpha_{13}\text{Log}(Y/Pg)^d + \alpha_{14}\Delta\text{Log}(L/P)_t + \alpha_{15}\text{Log}(M/P)_t + \alpha_{16}(rd-\Pi) + \alpha_{17}\text{Log}(PC/P)_{t-1}$$

Where $(Y/Pg)^d$ is real current disposable income, and L is the stock of bank credit to the private sector. All other variables are the same as defined earlier, and with exception to the real rate of interest $(rd-\Pi)$, all of them are expected to be positively related to real private consumption. Financial assets are included in the consumption function as a proxy for wealth; the greater the accumulated wealth, the higher is the level of consumption (Rowan, 1983). Bank lending to the private sector is included because households, like businesses, are likely to be liquidity-constrained. As such, and with low or even negative real loan rates, consumers may be more concerned with credit availability than its price(9). Notwithstanding this, the deposit rate is included to represent the opportunity cost of consumption as against savings. The sign of the interest rate coefficient, which depends on the substitution and income effects, is ambiguous. As it will be elaborated later the present model may be seen to depend on a simple lag structure based on the notion of partial adjustment. Thus, lagged consumption appears in equation (7.12) as an argument.

Disposable income is defined to be GDP less tax revenue (TR), that is:

$$(7.13)\quad (Y/P_g)^d_t = (Y/P_g)_t - (TR/P)_t$$

Furthermore, consumer disposable income is linked to net change in consumer wealth (financial assets), by the private sector budget constraint:

$$(7.14)\quad (Y/P_g)^d_t = [(PC_t + PI_t) + (\Delta M - \Delta L)]/p_t$$

Where, as in equation (7.1), M is the sum of currency in circulation and private deposits with banks. The identity (7.14) signifies that disposable income is either consumed,

invested or saved in the form of financial assets.

Real gross private investment is specified in terms of purely financial variables[10] as follows:

$$(7.15)\quad \text{Log}(PI/P)_t = \alpha_{18} + \alpha_{19}\Delta\text{Log}(L/P)_t + \alpha_{20}\text{Log}(M/P)_t + \alpha_{21}rl + \alpha_{22}DI + \alpha_{23}\text{Log}(PI/P)_{t-1}$$

This specification is, perhaps, consistent with the discussion in chapter 2, which suggests that investment in LDCs is constrained by the availability of savings, which depend on past as well as current income, and as such savings, especially in the form of financial assets, may well explain variations in investment. Thus, we incorporate the stock of financial assets, besides the flow of bank credits, and the lending rate of interest (rl) to explain modern sector investment in Sudan. Gross private investment is largely financed from investors own resources, by borrowing from banks or a combination of the two. Increases in bank credit would stimulate investment, and thus α_{19} would assume a positive sign. Following economic theory, the sign of the interest coefficient may be left to be empirically determined. Private savings in the form of financial assets appear in the investment function, providing a means for a more direct testing of the complementarity hypothesis. It has been demonstrated in several studies, e.g Gupta (1984), that the flow of resources from traditional to modern sectors is identical to changes in the stock of financial assets. This being chiefly implemented through financial development, the complementarity test may also be considered as a test for the effect of financial development in general on investment. Finally, DI, which is a dummy variable taking the value of 1 in 1971 and 1983, the periods during which the level of investment was spectacularly low[11], is expected to take a negative sign.

In the model, we consider export supply, which may be extremely sensitive to internal supply conditions such as the duration and amount of rainfall, to be exogenously given. Moreover, for a small open economy like Sudan, both export and import prices may be regarded as exogenous variables, i.e. determined in world markets.

Demand for real imports, which are dominated by necessary consumption and capital goods, is specified as follows:

$$(7.16)\quad \text{Log}(IM/Pm)_t = \alpha_{24} + \alpha_{25}\text{Log}(Y/Pg)_t + \alpha_{26}(Pm.ER/P) + \alpha_{27}\Delta\text{Log}(L/P)_t + \alpha_{28}\text{Log}(IM/Pm)_{t-1}$$

Where ER is the nominal rate of exchange, defined as the value of the Sudanese pound per US$; and the term (Pm.ER/P) is the real rate of exchange; all other variables are the same as defined previously. With exception to α_{26}, all coefficients are supposed to have positive signs. Positive links between domestic credit and imports are well established at both theoretical and empirical levels(12). While credit expansion adds to domestic absorption, both consumption and investment in LDCs tend to have substantial import contents.

7.2.5 The Government Sector:

As noted in chapter 3 continuous resort to money creation as a means of financing government deficit has led to a close association between the size of the deficit and monetary expansion in general. This is particularly true during the 1980s period, when monetary and financial policies were largely driven by fiscal considerations. Government expenditure and the size of the budget deficit depend, however, on government revenue, availability of foreign resources and the ability of the authorities to issue nominal money. While the flow of foreign resources is not a direct

policy variable, the ability of the authorities to print money appears to be unrestrained; it was largely guided by political rather than economic considerations. In effect, the flow of high-powered money becomes endogenous. In our model only domestic tax revenue is modelled as a function of income, and inflation:

$$(7.17)\quad \text{Log}(TR/P)_t = \alpha_{29} + \alpha_{30}\text{Log}(Y/Pg)_t + \alpha_{31}\Delta\text{Log}P_t + \alpha_{32}\text{Log}(TR/P)_{t-1}$$

Income is a fairly standard variable on which tax revenue positively relies. Inflation is included in order to test the hypothesis[13] that real government revenue tends to fall as inflation proceeds, whereas government expenditure tends to be fixed in real terms. Accordingly, the budget deficit widens with inflation. The relationship between government borrowing in general, and money creation in specific, and government budget deficit is given by its budget constraint as follows:

$$(7.18)\quad \Delta CBLG = GE - (TR+OR) - \Delta BFA$$

Where ΔBFA represents government borrowing from abroad, and OR is non-tax government revenue. In the above equation any excess of government expenditure over its total revenue can be financed either by borrowing from abroad, or from the central bank, or a combination of the two.

To sum up, the model consists of 18 equations, of which only 8 are behavioural, and the rest are identities or definitions. For ease of reference, we present the complete model below.

7.3 The Complete Model and its Salient Properties:

The equations of the model and definitions of variables are reproduced below:

$$(7.1)\quad Mt = TDt + Ct$$

(7.2) $\Delta RM = \Delta CBLG + \Delta CBLB + \Delta F$

(7.3) $\Delta F = EX_t - IM_t + \Delta Fc$

(7.4) $Log(C/P)_t = \alpha_0 + \alpha_1 log(Y/P)_t + \alpha_2 rd_t + - \alpha_3 D78 + \alpha_4 log(C/P)_{t-1}$

(7.5) $\Delta TD = \Delta R + \Delta L - \Delta CBLB$

(7.6) $\Delta R = \Delta RM - \Delta C$

(7.7) $\Delta L = [(1-ARR)/ARR] * \Delta R + \Delta CBLB + \Delta NOL$

(7.8) $ARR = \alpha_5 + \alpha_6 RRR + \alpha_7 rl + \alpha_8 D78$

(7.9) $\Delta log\ P_t = \alpha_9 + \alpha_{10}[log(Y/Pg)_t - log(Y/Pg)^*_t] + \alpha_{11}\Pi_t$

(7.10) $\Pi_t = \lambda \Delta P + (1-\lambda)\Pi_{t-1}$

(7.11) $(Y/Pg)_t = (PC/P)_t + (PI/P)_t + (GE/P)_t + (EX/Px)_t - (IM/Pm)_t$

(7.12) $log(PC/P)_t = \alpha_{12} + \alpha_{13} log(Y/Pg)^d_t + \alpha_{14} \Delta log(L/P)_t + \alpha_{15} log(M/P)_{t-1} + \alpha_{16}(rd-\Pi) + \alpha_{17} log(PC/P)_{t-1}$

(7.13) $(Y/P_g)^d_t = (Y/P_g)_t - (TR/P)_t$

(7.14) $(Y/P_g)^d_t = [(PC_t + PI_t) + (\Delta M - \Delta L)]/P_t$

(7.15) $log(PI/P)_t = \alpha_{18} + \alpha_{19} \Delta log(L/P)_t + \alpha_{20} \Delta log(M/P)_t + \alpha_{21} rl + \alpha_{22} DI + \alpha_{23} log(PI/P)_{t-1}$

(7.16) $Log(IM/P)t = \alpha_{24} + \alpha_{25} log(Y/Pg)_t + \alpha_{26}(Pm.ER/P)_t + \alpha_{27} \Delta log(L/P)_t + \alpha_{28} log(IM/Pm)_{t-1}$

(7.17) $log(TR/P)_t = \alpha_{29} + \alpha_{30} log(Y/Pg)_t + \alpha_{31} \Delta P_t + \alpha_{32} log(TR/P)_{t-1}$

(7.18) $\Delta CBLG = GE - (TR+OR) - \Delta BFA$

Endogenous variables:

M_t = Stock of money supply in period t.

TD_t = Stock of total private deposits with commercial banks

C_t = Stock of currency outside banks

ΔRM = Flow of reserve or high-powered money

ΔR = Flow of commercial banks' reserves

ΔF = Flow of foreign reserves into the central bank

ΔL = Flow of bank loans to the non-bank private sector

ARR = Average Reserve-Deposits Ratio

P = Consumer price level

Π = Expected inflation rate

Y_t = Gross Domestic Product over period t

Y^d_t = Consumer Disposable Income in period t

PC_t = Private Consumption Expenditure in period t

PI_t = Gross private investment expenditure in period t

IM_t = Demand for imports in period t.

TR = Government domestic tax revenue

ΔCBLG = Flow of central bank credit to the government

Exogenous Variables:

ΔCBLB = Flow of central bank credits to commercial banks

ΔFc = Net foreign capital inflow per period.

rd = Annual deposits rate of interest

rl = Annual rate of interest on bank loans.

RRR = Required Reserve Ratio

ΔNOL = Flow of net other loans by commercial banks, based on, e.g., borrowing from abroad and drawing on other assets such as capital, which are all quite limited in volume.

Y* = Trend value of Y

EX = Supply of exports of goods and services in current domestic price.

GE_t = Total government expenditure during period t.

Px = Export Price Index

Pm = Import Price Index

ER = Rate of exchange, defined as the value of the Sudanese pound relative to the American Dollar

OR = Non-tax government revenue

ΔBFA = Net flow of loans to the government from abroad, per period

D78 and DI = Dummy variables
All lagged dependent variables.

In the model, two major links between the financial and expenditure sectors are specified. First, credit availability is one of the determinants of private expenditure and aggregate imports. The existence of credit-rationing has long been incorporated in macroeconomic models for developed countries on the assumption of significant imperfections in the loan market, so that non-price credit rationing occurs (Shapiro, 1966, and Stilitz and Weiss, 1981). In most LDCs such as Sudan, credit rationing may be assumed to take place because of interest rates fixing policy that keeps them below their market clearing levels, though other forms of imperfection may also exist. The second major link between the financial and real sectors is specified following the repressionist hypothesis of complementarity between financial and real capital. This is exemplified in the investment equation in which financial assets appear among the regressors.

In most of the stochastic equations of the model, the lagged dependent variable is included as a regressor. Lagged variables offer some flexibility in modelling economic behaviour, which may not be safely assumed to be rigid under any circumstance. The present model incorporates a simple lag structure based on the notion of partial adjustment, which may also enable us to calculate long-run elasticities, as well as short-run elasticities. Before turning to estimation, it should be noted that the model is essentially a demand-determined model, with the supply side being represented by potential income and inflation only. A comprehensive model should also account for other supply factors by incorporating, for instance, production functions. This has not been attempted for data constraints, and for similar

reasons, only consumer price inflation is modelled, whereas other types of inflation such as wage inflation may not be irrelevant.

7.4 Estimation of Stochastic Equations and Discussion of Results:

7.4.1 Estimation Issues:

As mentioned previously, the Sudanese economy underwent significant changes, especially over the last decade. It would have, therefore, been more appropriate to use quarterly data that reflect these changes without going far back into the past. Unfortunately, only annual data is available, and the model will be estimated using such data(14) for the period 1960-88. Again, as already stated, original variables are all measured in current domestic prices, and their real values are then obtained by dividing through by the appropriate price deflator, with 1980 as a base year.

The estimation strategy followed in this model is a conventional one. We begin by testing our maintained hypothesis using the specification of stochastic equations in section (7.3) above. Various statistical tests are then conducted to test for the validity of the functional relationship, the lag structure on variables and the possibility of omitted variables. Our research strategy, thus, follows the variable addition principle(15), which starts with a simple initial hypothesis, and then test for their validity, and omit those variables that fail the diagnostic checks. Meanwhile relevant variables can be added and their joint or separate significance evaluated. This strategy is used, here, for two reasons. First the number of observations may not allow the inclusion of all relevant variables, and estimating the equation at a time. Second, there would be a high possibility of a multicolinearity

problem, which renders estimated coefficients inefficient.

The presence of multicolinearity in time series data makes it difficult to separate the influence of individual explanatory variables on the dependent one. It enlarges the standard error, lowers t-ratios, and generates inconsistent numerical values and signs of explanatory variables. Multicolinearity, which results largely from the tendency of economic variables to move together over time, is particularly a problem when lagged values of regressors are used as separate independent variables in the relationship. Where multicolinearity is present, the method of Ordinary Least Squares (OLS) becomes an inefficient estimator.

The use of OLS assumes that the explanatory variables are truly exogenous, i.e. there is no simultaneous dependence between explanatory and endogenous variables in the model. But, the various relations in our model are to a great extent part of a whole system of equations. As a result OLS estimates might be biased and inconsistent. Accordingly, with exception to one equation, we have estimated the model using Two Stage Least Squares, which is a simultaneous equations method. The application of this method permits the interaction of various variables in the form of a simultaneous equations system, so that the simultaneous bias existing in OLS estimates is eliminated. To obtain TSLS estimates we, first, using OLS, regressed all the dependent variables that appear as regressors in other equations on all predetermined variables in the system. The resulting estimates are then used instead of endogenous variables in the original relations, and OLS again applied to this reformulated relation.

Variable deletion or addition is decided on the basis of the goodness of fit and statistical significance of parameters. But, it is on the adopted estimates that subsequent diagnostic tests were conducted. These tests were

as follows:

1. The DW-statistics is used to detect autocorrelation, but where a lagged dependent variable is employed, this test is replaced by the Lagrange-Multiplier (LM) test. The latter is also a test for serial correlation of the residuals, and has an F-distribution with n-k degrees of freedom; where n is the number of observations and k is the number of parameters in the regression (see Godfrey, 1978).

2. Normality test, which is a test for the normality of the residuals. It has a $Chi^2(2)$ distribution.

3. Heteroscedasticity test (H), which is a test based on the idea that squares of the regressors have been excluded from the model. It also has an F-distribution.

4. Test for structural stability. We use Goldfeld and Quant, G.Q., (1965) test to examine the structural stability of the model, i.e. stability of the variance (Homoscedasticity assumption). To perform this test we omit some central observations and run two separate regressions for the periods 1961-71 and 1978-88. The latter period showed major unfavourable developments in the Sudanese economy. These included several devaluations of the Sudanese pound which began in 1978, and failed to alleviate production bottlenecks, resulting in significant distortions in the economy. These distortions were then exacerbated by natural adversities such as drought, as well as the civil war.

5. Finally, forecast chi^2 test is used as a prediction test or test of parameter constancy over the forecast period. This test was carried out along with $Chow^{(16)}$ test, which is a test for the joint stability of regression coefficients and standard errors, i.e. a test for predictive power or failure. To perform these tests four observations were retained for within sample forecast.

Hendry (1983) provides a full discussion of various statistical tests, and their role in model evaluation. He

argues that if these tests are not satisfied, then, the model under consideration is inadequate. The solution is to revise the model and/or its dynamic structure rather than searching for an alternative method of estimation. The selection of one model or another is justified in terms of standard errors of the regression rather than the coefficient of determination, R^2.

All the results in this chapter were estimated by PC-GIVE, version 4.1, which has been developed at the University of Oxford by Hendry (1986) for dynamic modelling of time series.

The equations of the model were estimated one at a time, and with exception to equation (7.8) all the equations were estimated by the Two Stage Least Squares method. The results and the hypotheses embodied in each of the stochastic equations are examined below.

7.4.2 The Financial Sector:

Two behavioural equations in the financial sector have been estimated. These are the currency demand function, and the average reserves ratio equation. The results obtained from the estimates of these equations indicate that the model fits the data very well. Almost all the parameter estimates have their expected signs, but some of them are not estimated precisely. The real currency demand equation is examined first.

$$\begin{aligned} 7.4\ \text{Log}(C/P)_t = {} & -0.6280 + 0.2552\ \text{Log}(Y/P)_t - 0.0492\ \Delta rd_t \\ & (-0.912) \quad (1.991) \qquad\qquad (-0.701) \\ & + 0.1155\ D78 + 0.7481\ \text{Log}(C/P)_{t-1} \\ & (1.582) \qquad\quad (6.470) \end{aligned}$$

EP:1962-88 R^2=0.979 RSS=0.090 LM(1,21)=0.05

$Chi^2(2)$=0.481 H(7,14)=2.76 G.Q.=0.517

Forecast-Chi2(4)/4=1.19 Chow-test(4,18)=0.67

Where EP is the estimation period and all other tests are the same as in the previous subsection. t-ratios are in parentheses.

The coefficient of determination, as measured by R^2, adjusted for the degrees of freedom, suggests that more than 97% of variations in currency demand are explained. As anticipated income is the major determinant of demand for currency. While the rate of interest, or profit over relevant years, has the expected sign, its coefficient is very small and statistically insignificant. Nevertheless, this indicates that higher rates of interest would, abysmal, reduce currency holdings, perhaps in favour of bank deposits. The coefficient of the dummy variable D78 turned out to be positive, indicating that the incorporation of Islamic banks had not contributed to an increased use of banks' money as against currency. This result reinforces our argument, in chapter 5, that the advent of Islamic banks has not altered the trend growth rate of overall financial savings. The short-run and long-run income elasticities of demand for currency are consistent with our a priori expectations; the former was 0.25 and the latter was unity. There is no evidence of structural instability, and the prediction power of equation (7.4) appears to be strong. In fact all the diagnostic tests have been easily passed.

The equation explaining banks behaviour in keeping reserves was estimated with the use of Ordinary Least Squares method. The results of estimation were as follows:

$$7.8\quad ARR = \underset{(0.991)}{0.0433} + \underset{(2.000)}{1.4583}\ RRR + \underset{(4.241)}{0.1831}\ D78 - \underset{(-0.156)}{0.0010}\ rl$$

EP=1962-88 R2=0.814 RSS=0.096 D.W.=1.508 Chi2(2)=0.501

H(5,17)=0.778 G.Q.=0.78 Frecast-Chi2(4)/4=0.49

Chow-test(4,21)=0.44

The above results show that the average reserves ratio of banks is well explained in terms of the required reserves ratio, while the opportunity cost of keeping reserves, i.e. the loan rate of interest has the right sign, but with a quite small and statistically insignificant magnitude. In fact RRR was expected to explain both the forced reserves ratio and the free reserves ratio for reasons already mentioned in section (7.3) above. This was expected to hold, especially during the period up to 1978. Casual empiricism indicates that banks were accustomed to keeping an almost constant fraction in the form of free reserves over that period. Since then, and probably due to the incorporation of Islamic banks, as well as tight credit policies, there have been considerable increases in the free reserves ratio, and subsequently the average reserves ratio. During the period 1978-88, Islamic banks gained a substantial share in the banking system's assets, and as we mentioned earlier these banks tend to have higher reserves-deposits ratio in so far as transaction deposits are concerned. This may well be the reason for D78 to have a positive and statistically significant coefficient. It is, however, difficult to disentangle the influence of Islamic banks on the average reserves ratio from that of central bank credit policy, which was becoming increasingly tight during the 1980s. But, it should be noted that credit policy was binding only in relation to bank advances to certain sectors, and not to overall credit. This means that banks were free to lend as much as they like to priority or approved sectors.

7.4.3 The Inflation Equation:

The specification of the inflation equation was a

relatively simple one. Nevertheless, it provides a reasonably good explanation of consumer price inflaation in Sudan as appears in the following results:

$$7.9a\ \Delta LogP_t = \underset{(1.798)}{0.0523} + \underset{(2.707)}{0.421}[Log(Y/Pg)-Log(Y/Pg)^*] + \underset{(3.923)}{0.6887}\Pi t$$

EP:1964-88 R^2=0.49 RSS=0.143 D.W.=1.578 $Chi^2(2)$=0.517

H(8,11)=0.521 G.Q.=1.78 Forecast-$Chi^2(4)/4$=0.07

Chow-test(4,18)=0.07

Where Π or expected inflation is estimated as a distributed lag of actual inflation; the lag length being 3 periods. That is:

$$7.10\ \Pi_t = \beta_1\Delta LogP_{t-1} + \beta_2\Delta LogP_{t-2} + \beta_3\Delta LogP_{t-3}$$

Substituting for Π_t from equation (7.10) into equation (7.9a), and reestimating, without the constant term, we obtained the following results:

$$7.9b\ \Delta LogPt = \underset{(2.369)}{0.3395}[Log(Y/P_g)-Log(Y/P_g)^*] + \underset{(2.758)}{0.5984}\Delta LogP_{t-1} + \underset{(0.730)}{0.1826}\Delta LogP_{t-2} + \underset{(0.646)}{0.1468}\Delta LogP_{t-3}$$

R^2=0.82 RSS=0.151 D.W.=1.838 $Chi^2(2)$=0.184 G.Q.=1.056

Forecast-Chi2(4)/4=3.04 Chow-test(4,17)=2.72

We imposed the restrictions that β_3=0, and $\beta_1+\beta_2$=1; and reestimated equation (7.9a) after reparameterization. On the basis of the test for the validity of priori restrictions on parameters (see Pindyck and Rubinfeld, 1981, P.119), which has an F-distribution (F=1.11), we fail to reject the null

hypothesis, and accept that the restriction is valid. It may, consequently, be assumed that changes in the level of inflation would in the long-run depend on the state of excess demand in the economy. The latter is proxied by the difference between actual and potential real output. That is a 1% change in excess demand will lead to a 1% change in the inflation rate. Moreover, with zero excess demand, actual and expected inflation will exactly be the same.

It is interesting to note that Aghevli and Khan (1983) have estimated a similar inflation function for 8 developing countries, and found the influence of excess demand to be positive, but small and insignificant for each of the countries considered.

7.4.3 The Expenditure Sector:

We have estimated equations for private consumption and investment expenditures, and aggregate import demand. The estimated coefficients of the consumption function are all of the expected signs; but the wealth variable (M) has been omitted from the equation due to a multicolinearity problem. The magnitudes of these coefficients also appear to be in conformity with empirical studies[17] of consumption relation in LDCs. The regression results for the consumption function were as follows:

$$\underset{7.12a}{\text{Log}(PC/P)_t} = \underset{(1.544)}{0.8729} + \underset{(4.719)}{0.577}\text{Log}(Y/Pg)^d_t + \underset{(0.0138)}{0.0138}\Delta\text{Log}(L/P)_t \underset{(1.118)}{-0.0054}(rd-\Pi)_t + \underset{(2.265)}{0.303}\text{Log}(PC/P)_{t-1}$$

EP:1962-88 R^2=0.907 RSS=0.094 LM(1,21)=0.21

Chi2(2)=0.015 H(8,13)=1.467 G.Q.=0.818

Forecast-Chi2(4)/4=0.24 Cow-test)4,18)=0.16

The coefficient of real consumer disposable income is highly significant, and yields a short-run income elasticity of consumption of about 0.6, while the long-run elasticity is unity. The high long-run income elasticity of consumption signifies that increases in current disposable income would result in proportional rises in private consumption over the long-run, which is consistent with the low saving rate in Sudan (see chapter 3). The coefficient of the real rate of interest has a negative sign, but quite small and statistically insignificant. This suggests that changes in interest rates, or perhaps profit rates on deposits, would not induce sizeable changes in consumption, and thereby in savings. The finding on the interest rate elasticity confirms Haque *et al* (1990) finding of a low interest elasticity of consumption for several LDCs. Likewise the flow of bank credit to the private sector has a small and insignificant, but positive impact on real private consumption expenditure. As the above estimated consumption function does not directly capture the effect of inflation, which might be an appropriate measure of the opportunity cost of consumption, equation (7.12a) was reestimated with expected inflation replacing the real rate of interest. The following regression results were obtained:

$$\underset{}{7.12b\ \text{Log}(PC/P)t} = \underset{}{0.3112} + \underset{(0.489)}{0.566}\text{Log}(y/Pg)^{d}_{t} + \underset{(0.799)}{0.081}\Delta\text{Log}(L/P)_{t} - \underset{(0.891)}{0.166}\prod_{t} + \underset{(2.866)}{0.396}\text{Log}(PC/P)_{t-1}$$

$R2=0.912$ $RSS=0.095$ $LM(1,21)=0.01$ $Chi^2(2)=0.04$ $H(8,14)=0.66$

$G.Q.=0.94$ $Forecast\text{-}Chi^2(4)/4=0.53$ $Chow\text{-}test(4,19)=0.40$

The above results are quite similar to those in equation

(7.12a), except that the opportunity cost in the latter has a larger magnitude, but in both cases it was statistically insignificant.

The specification of the investment equation in section (7.2) above has well fitted the data. The regression results were as follows:

$$\begin{aligned}7.15\ \Delta\text{Log}(PI/P)_t &= -0.4\,2549 + 1.1329\text{Log}(M/P)_t \\ &\quad (-2.565) \qquad (3.361) \\ &+ 0.5610\Delta\text{Log}(L/P)_t - 0.0439rl_t - 0.7460\ D78 - 0.5120\ DI \\ &\quad (1.847) \qquad (-2.212) \qquad (-3.285) \qquad (3.000) \\ &.+ 4219\text{Log}(PI/P)_{t-1} \\ &\quad (-3.133)\end{aligned}$$

EP:1962-88 R2=0.922 RSS=0.84 LM(1,19)=1.41

Chi2(2)=0.405 H(10,9)=2.71 G.Q.=0.1190

Forecast-Chi2(4)/4=0.86 Chow-test(4,116)=0.75

The basic variables contained in the investment equation are fairly standard variables, but exclusion of income is rather unusual. The rationale for inclusion of income is that as income increases the rate of savings may rise, releasing resources for investment. Moreover, rises in income may generate demand for new products, or excess demand for existing ones. This would stimulate investment required to meet such demand changes. While the use of financial assets (M), may account for the effect of income through savings, estimating equation (7.15) with both income and M was found to raise the residual sum of squares substantially. Accordingly, income was deleted from the equation in favour of M, which is also necessary in testing the hypothesis of complementarity between financial and real capital.

The estimated investment equation has easily passed all the diagnostic checks, and all the coefficients turned out with their theoretical signs. The flow of bank credit, in real terms, to the private sector though only significant at the

10% level has a positive and relatively large coefficient. Comparing the results in the investment and consumption functions, it appears that changes in credit will have a greater influence on the former than on the latter. The coefficient of the lending rate of interest, on the other hand, is negative and significant, but relatively small in size(18). Again this insinuates that interest rate changes may have a rather weak direct impact on private expenditure. But, interest rate fluctuations may have a compound effect on private expenditure in that they also affect credit availability.

The above regression results provide evidence that financial assets accumulation can be conducive to investment; the variable representing financial assets has both a positive and statistically significant coefficient. It is natural that the dummy variable DI takes on a negative sign as it carries the influence of adverse national developments on investment. The coefficient of D78 is also negative and significant, indicating, perhaps, the rapid deterioration in investment environment and activities in Sudan since 1978. It also signifies that the advent of Islamic banks, despite their apparent strong investment orientations, has not helped to halt the trend of declining real private investment during the last decade.

Finally, the import demand equation turned out to be rather problematic. This equation was specified in real terms as in section (7.2) above. At the empirical level, however, real imports were found to be poorly related to the explanatory variables. The reason, as often is the case with respect to the foreign sector(19), may be the use of different price deflators. Some of these deflators, namely those of imports and exports, are hardly reliable. The estimate of equation (7.16) in nominal terms seems to produce a theoretically consistent and improved fit. Although the use of nominal

values ought to be avoided on theoretical grounds, it is not uncommon in empirical research, precisely for reasons relating to the price indices: "Occasionally, researchers have used the value of imports in current dollars as the dependent variable (Leamer and Stern, 1970). The results of the import equation, thus estimated, were as follows:

$$7.16\ \text{LogIM}_t = \underset{(-2.355)}{-0.979} + \underset{(2.149)}{0.3686}\text{LogY}_t - \underset{(-2.45)}{0.1616}\text{ER}_t + \underset{(0.705)}{0.1879}\Delta\text{LogL}_t + \underset{(4.40)}{0.7259}\ \text{IM}_{t-1}$$

EP:1961-88 R^2=0.988 RSS=0.56 LM(1,21)=1.23
Chi^2(2)=0.430 H(8,13)=1.348 G.Q.=2.6
Forecast Chi^2(4)/4=5.86 Chow-test(4,18)=2.49

The estimated import equation has passed all diagnostic checks, except that the tests of parameter constancy over the forecast period give conflicting evidence on its prediction power. The multiple correlation coefficient is expectedly high. The results yield a short-run income elasticity of 0.368, and a near unitary long-run elasticity. Again domestic credit expansion seems to have a positive, but insignificant influence on expenditure on foreign goods and services.

The coefficient of the nominal exchange rate indicates that Sudanese imports are responsive to exchange rate changes, and that a devaluation of the Sudanese pound would lower imports demand. Although, such result is theoretically plausible, it is at odd with the commonly held believe that Sudanese imports are hardly sensitive to exchange rate changes, simply, because they are heavily weighed by basic necessity goods. The analysis in chapter 3 indicated that both investment and consumption in Sudan tend to have a high imports content. However, the exchange rate effect is small,

and whether a devaluation of the Sudanese pound would improve the balance of payment can, of course, only be answered when the simultaneous effect of devaluation on exports supply is known.

7.4.4 The Government Sector:

As expected, real government revenue from taxation appears to depend significantly on real income, inflation and on its previous levels. The econometric results of the estimated tax function are summarized below:

$$7.17 \quad \underset{}{\text{Log}(TR/P)_t} = \underset{(-0.3596)}{-0.4709} + \underset{(2.092)}{0.3858}\text{Log}(Y/P)_t - \underset{(-2.786)}{0.0103}\Delta P_t + \underset{(3.945)}{0.5814}\ \text{Log}(TR/P)_{t-1}$$

EP:1961-88 R^2=0.61 RSS=o.49 LM(1,23)=0.53 $Chi^2(2)$=1.143
H(6,17)=0.446 G.Q.=1.00
Forecast-$Chi^2(4)/4$=2.61 Chow-test(4,20)=2.24

The multiple coefficient of determination is moderately good. There is no evidence of structural instability in the tax equation, which has also performed well in terms of forecasting. The short-run income-elasticity of tax is moderately low, indicating low levels of per capita income in the country. Imposing the restriction that $\alpha_{30}+\alpha_{32}-1=0$, re-estimating the above equation and testing, the long-run income elasticity of unity was confirmed. The inflation coefficient indicates a significant and negative influence on real tax revenue. This result is in harmony with the fact that tax systems in LDCs are less adaptive to changing economic conditions, and also supports empirical findings for LDCs, by, notably, Dutton (1971) and Aghevli and Khan (1983), which suggest that real tax revenue varies inversely with the

rate of inflation. The implication of this is that if government expenditure is fairly constant in real terms then the budget deficit will widen as inflation rises.

7.4.5 Summary of Empirical Findings:

It is clear from the regression results above that the model has fitted the data satisfactorily. Almost all the parameter estimates of the model have their expected signs. Moreover, there was no evidence of instability in these parameters, and the forecasting performance of the model as judged by Forecast-Chi^2 and Chow-test is generally good. Therefore, the model may be used for simulation and policy analysis. Before doing so, we summarize the main findings of the estimated model in the following:

1. Demand for currency, which depends mainly on income, has not been reduced by the advent of Islamic banks, which was expected to boost demand for financial assets in the form of bank liabilities and claims. However, real currency demand has a negative coefficient with the rate of interest.
2. The average reserves ratio of banks is well explained in terms of the required reserves ratio and the lending rate of interest, which represents the opportunity cost of holding reserves. This means that the required reserves ratio may be used to influence the average reserves ratio, and via that the credit multiplier, which is a major determinant of credit flows to the private sector.
3. The rate of interest, or profit in relevant years, bears its anticipated sign in all the relationships in which it was a part. But, it was only in the case of real private investment that its coefficient was found to be significant. This indicates that interest rate policy is likely to be less effective. However, in our model, interest rates will, besides the direct effects, have indirect effects on the expenditure sector. The indirect effects, as we will explain

further when the model is simulated, work through both the credit multiplier and bank reserves as determined by high-powered money and currency in circulation.

4. Bank advances to the private sector also seem to have positive impacts on real private expenditure and imports demand. But, again it was only in the case of investment that the coefficient of real credit flow was significant and sufficiently large. This suggests that credit policy will have a more predictable effect on private investment than on consumption and imports.

5. Consumer price inflation varies positively with the level of excess demand in the economy and expected inflation. In the long-run, however, variations in the rate of inflation will be determined by excess demand only.

6. There is evidence in our empirical model that accumulation of financial assets can be pivotal to real capital formation. Therefore, it may be argued that financial development, in the sense of both widening and deepening, can be growth-promoting.

7. Real private consumption depends largely on real disposable income, while tax revenue relies positively on real GDP and negatively on inflation. Hence, inflationary finance, which raises both government expenditure and inflation, would reduce tax revenue in real terms. In the model, the method of financing government expenditure in general and budget deficit in specific is particularly important in so far as private expenditure is concerned.

7.5 Simulation Analysis of the Model:

This section examines the overall properties of the model in terms of dynamic simulation exercises. This involves an analysis of the dynamic response of key endogenous variables to shocks to certain independent variables.

The model specified earlier can be written in matrix form

as:

7.19 $Ay_i + Bx_i = u_i$

Where y_i, x_i, and u_i are vectors of endogenous variables, predetermined variables and disturbance terms, respectively, and A and B are matrices of the respective coefficients of endogenous and exogenous variables. If the coefficients of all variables in the system are known, then, the model can be solved for the values of dependent variables, given values of the predetermined variables. Assuming that the matrix A is non-singular, we can solve to obtain the reduced form of the model. Multiplying both sides of equation (7.19) by the matrix A^{-1}, and rearranging, we obtain:

(7.20) $y_i = \delta x_i + v_i$

Where $\delta = -A^{-1}B$, and $v_i = A^{-1}u_i$; the error terms are assumed to be uncorrelated, with zero mean and constant variance. Using all n observations available for each dependent and each independent variable, the model may be rewritten as follows:

(7.21) $Y = \delta X + V$

Where Y, X, and V are matrices of endogenous variables, independent variables and error terms respectively.

Our approach to simulation analysis involves construction of the run base of the model, shocking a certain exogenous variable, and recomputing the model to obtain a new solution run. Comparing the base and the new solution runs, the impact of the shock can then be determined. Provided that the independent variable of interest is perturbed by a fixed amount, the resulting multiplier can easily be calculated as:

$M = (Y_{shock} - Y_{base}) / (X_{shock} - X_{base})$

Where M is the multiplier value, and Y and X are the respective values of endogenous and exogenous variables. In

the case of variables with different dimensions, such as the rate of interest and GDP, shock effects are presented as a percentage difference from the base run of the dependent variable. That is:

$$= [(Y^{shock} - Y^{base})/Y^{base}]*100$$

Given the parameter estimates of stochastic equations in section (7.4), four sets of simulation experiments were conducted with the complete model, including identities. To obtain a dynamic solution of the model all variables in the system were unfixed, with lagged dependent variables being generated by the model. This yields the base run historical simulation, which is useful in evaluating the overall stability of the model. Moreover, within sample or historical simulation is particularly appropriate, since we are interested in the sensitivity of key endogenous variables to certain policy regimes. Having constructed the base run, certain policy shocks were then introduced, and their impacts analysed. Although observed values of endogenous variables may be subject to repeated shocks, which may influence the properties of the model, when certain exogenous variables are disturbed, the stability of the model has always been maintained. This indicates that even if repeated shocks were entertained, they are of no significant impact, so that the way the base run was constructed is a valid one. At the same time, the linearity of the model ensures that the simulation results are not unduly sensitive to the magnitude of the shock, which the system undergoes, or the initial values of the exogenous variables. Hence, the simulation experiments may enable us to accurately calculate and compare the effects of following certain long-run policies on endogenous variables of interest.

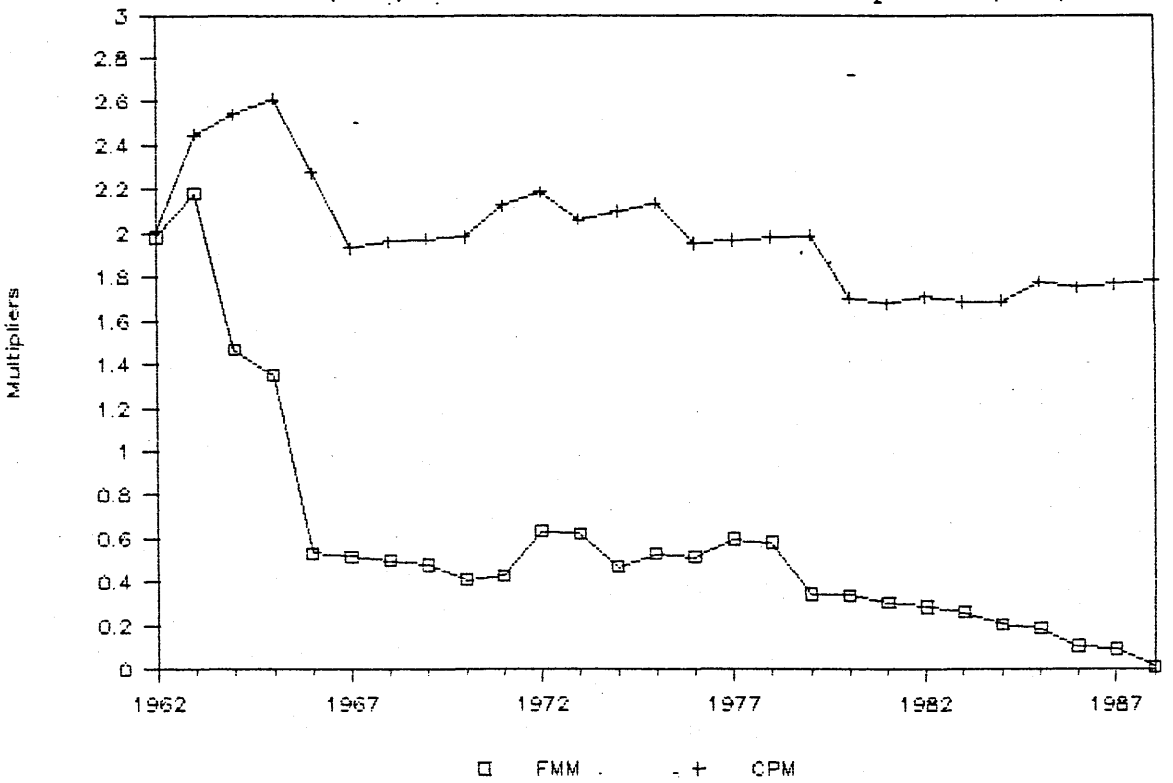
The base run was constructed under the same assumptions of the estimated model, with all relevant variables being

measured in 1980 constant prices[20]. This ensures a stationary long-run equilibrium. The magnitude of the shock to each exogenous variable considered is determined in proportion to its observed value. In our simulation experiments, we have examined the effectiveness of both monetary and fiscal policies, and considered shocks to the system originating from the financial sector as well as the expenditure sector. These simulation experiments are:

1. a permanent increase in the required reserves ratio of 5%, i.e. from an average of 10% to 15%.
2. a permanent 10% rise in the rate of interest.
3. a permanent increase of Ls 100 mn (about 18%) in real government expenditure, and
4. a permanent rise in general tax revenue of Ls 50 mn (i.e. 11%) on the average.

The starting point of our simulation analysis was to calculate the closed and open economy multipliers for autonomous expenditure, the knowledge of which may be helpful in assessing the impact of various shocks on the economy in general. The values of these multipliers were found to be 3.2 and 2.0 respectively. Thus, as economic theory suggests, the open economy multiplier is smaller than the closed economy amplifier due to leakage via imports. This means that if autonomous expenditure varies by 1%, then GDP will change by 3.2% in the case of a closed economy, and 2% in the case of an open economy. These multipliers were calculated on the assumption of *cetris paribus*. With flexible or endogenous prices, however, equation (7.9a) would ensure that the multiplier will eventually turn to zero over the long-run, as excess demand rises with actual output. The full model multiplier and the constant-price open economy multiplier are shown in figure (7.1) below. It is clear that the former,

Figure (7.1): The Constant-price open economy multiplier (CPM) and the full model multiplier (FMM)



which averaged 0.7, declines sharply, approaching zero towards the end of the sample period. According to the results in equation 7.9a (section 7.4), inflation should rise by the same rate as excess demand, and, hence, changes in real variables that result from various shocks would tend to vanish over time.

Although this was the case in our simulation experiments, it is expected that the inflation effect in our model would be moderate. This is so not only because of the relatively small inflation coefficients in the estimated model, but also because inflation itself was moderate over most of the period considered. Throughout the 1960s and up until the late 1970s, the Sudanese economy was in a low growth macroeconomic equilibrium, with an average annual rate of inflation of 6%. Since then, however, the inflation rate rose spectacularly, averaging 22% between 1978 and 1988. Thus, inflation effects are expected to be more visible during this sub-period. All

simulation exercises were carried out with fixed as well as flexible prices. For comparison, the fixed price simulation results are shown in Appendix 1, while the flexible price results are presented and discussed below.

7.5.1 An Increase in the Required Reserves Ratio (RRR):

The RRR plays a central role in our model, and it is, indeed, a major instrument of monetary policy in Sudan in recent years. An increase in the required reserves ratio affects banks balance sheets; it raises banks' reserves, but only at the expense of bank advances to the private sector. This, in turn, influences private expenditure as well as aggregate imports demand during the impact period. As income declines, demand for cash balances falls. Moreover, the reduction in banks' lending implied by the higher required reserves ratio will act as a detriment to the growth of their deposits, because the multiple expansion of reserves-related credits that generates deposits can work in the opposite direction.

Figures (7.2), (7.3) and (7.4) below show the nature and magnitudes of the influence of the required reserves shock on currency demand, credit flows, absorption and output. All these figures display negative effects, indicating that the policy of higher RRR is deflationary and effective. As in figure (7.2) credit flows and private deposits fell by an average of 18% and 13.3% respectively, and the rates of decline tend to decrease over time, but become more stationary towards the end of the sample period. Currency demand does not respond immediately to the increase in RRR, but starts to fall from about the third period at an increasing rate before it stabilizes towards the end of the period; the average rate of decline in real currency demand is 5%. The delayed impact of RRR on currency holdings is

Figure (7.2): Required Reserves Shock Effects on

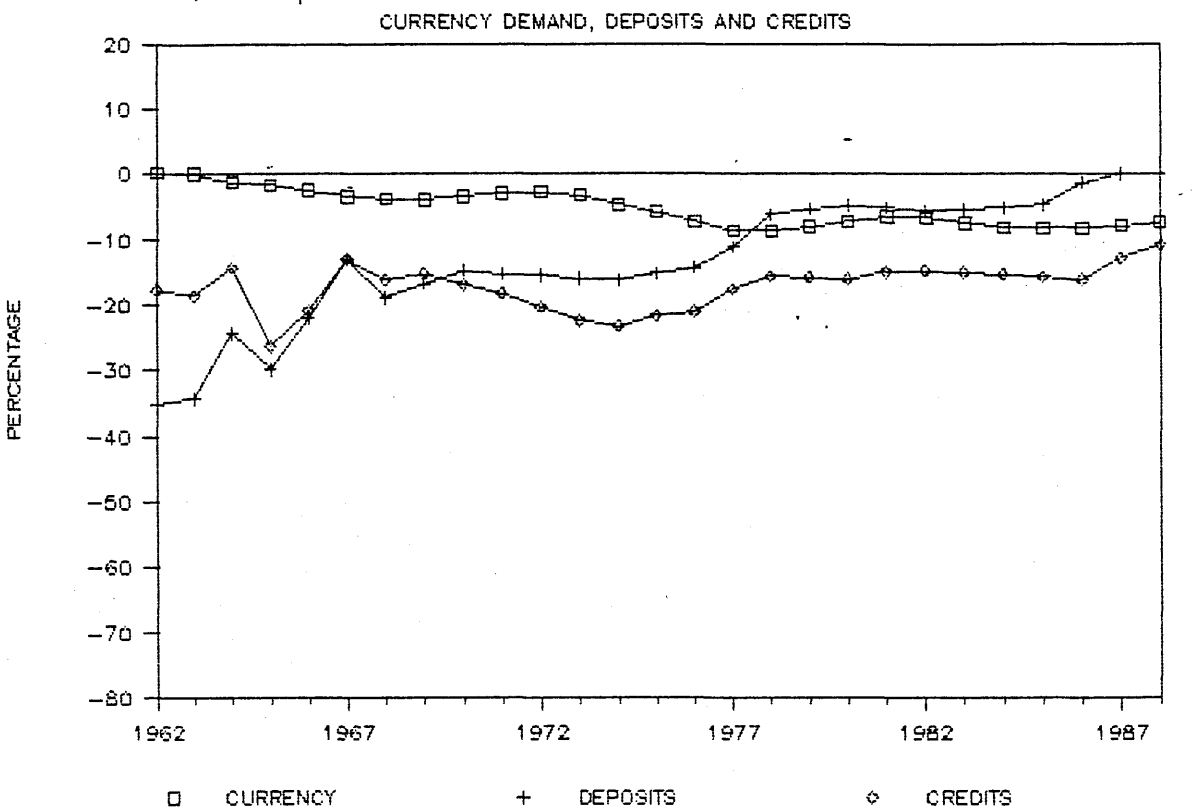
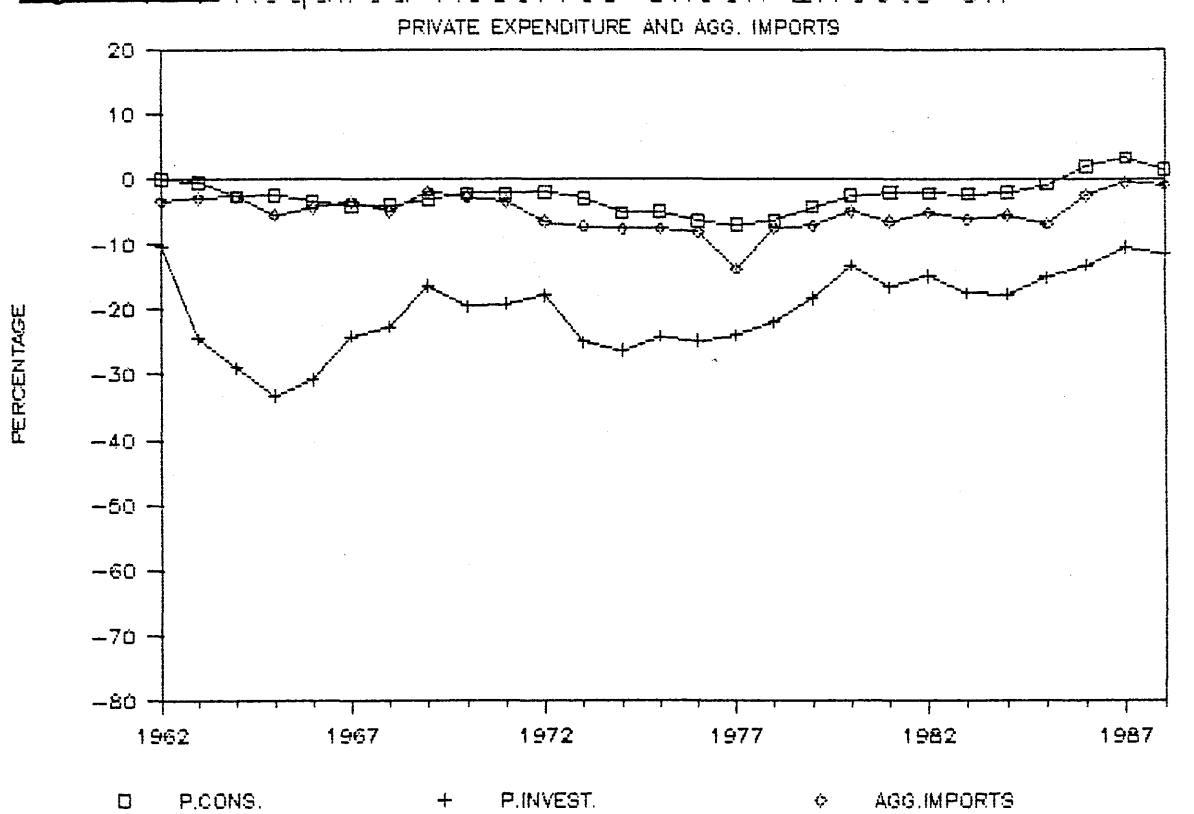


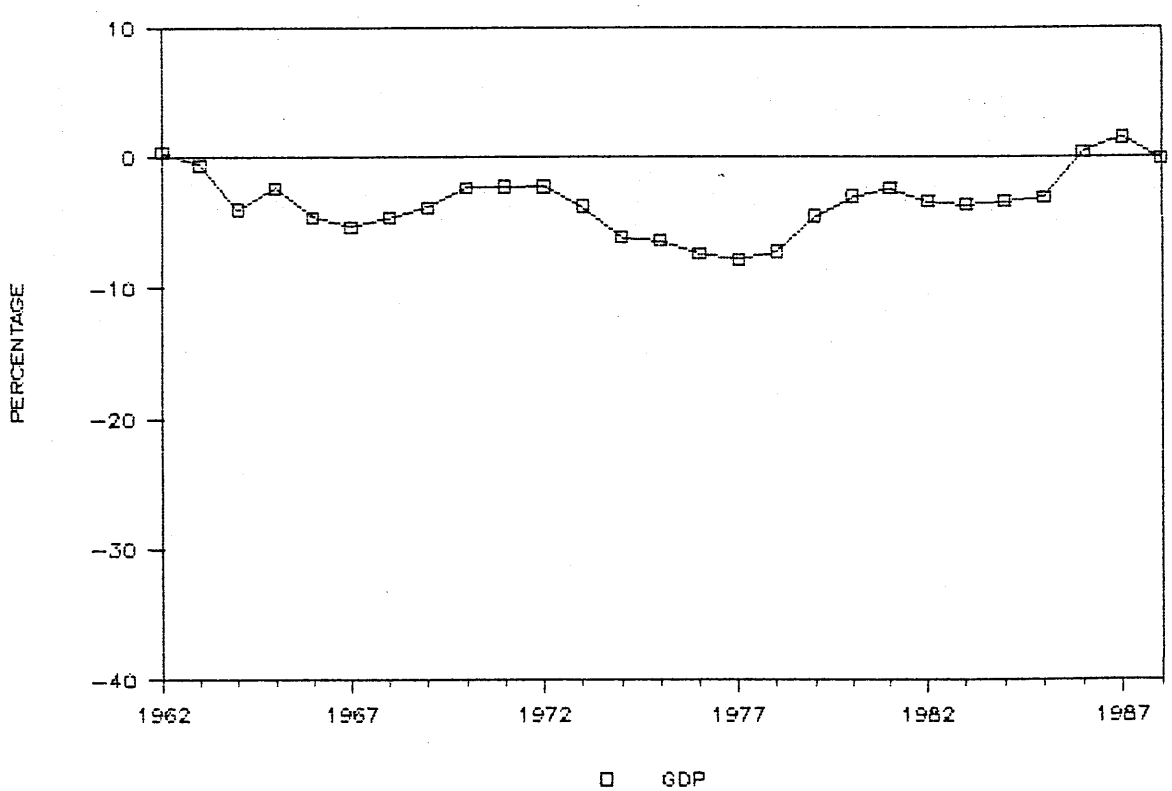
Figure (7.3): Required Reserves Shock Effects on



expected as the latter responds to changes in income, which come about only when private expenditure decreases as the flow of credit falls. The amount by which currency demand adjusts is quite small relative to changes in deposits and credits. Nevertheless, it suggests that reserve requirements policy can alter the composition of financial assets by raising the ratio of currency to deposits.

Deflationary monetary policy in the form of high reserves requirements has an immediate and strong impact on private investment, which decreases by 19% on the average (Figure 7.3). This is far greater than the fall in private consumption of 3.0%, although the latter is subject to two negative effects: that resulting from decreased credit and that caused by lower income. Meanwhile, imports contract at the average rate of 5%. The compound effect of the fall in private expenditure and imports is a considerable decline in income, averaging 3.2% - Figure (7.4). The effect of the required reserves shock on expenditure variables seems to be

Figure (7.4): Required Reserves Shock Effect on Gross Domestic Product (GDP)



clearly permanent only in the case of private investment, and this is because of the permanent fall in credit flows, as well as the negative effect of a permanent decrease in currency demand on the money stock. Change in the latter is equal to the sum of variations in currency demand and total deposits.

7.5.2 Increases in Interest Rates:

To perform a simulation experiment involving interest rates, we increased both the deposit and lending rates by a permanent amount of 10%. This pushes the two rates well above the rate of inflation over the period up to 1978, but yields real rates that are only slightly different from zero from then onwards. Having achieved positive and relatively high real rates of interest over most of the period under review, this experiment can well help us to, once again, evaluate the financial development hypothesis. A rise in interest rates, in our model, would influence the credit multiplier and via that credit flows, which in turn, affect private absorption, aggregate imports and income. This is in addition to the direct effect of interest rates on private investment and consumption.

The permanent rise in interest rates, however, produces positive, but steadily vanishing effects. In general, the interest rate shock seems to reproduce the required reserves shock effects, but in reverse and with different magnitudes. Figure (7.5) below demonstrates that credit flows and private deposits increased at the average rates of 9% and 10%, respectively, over the entire period, while there was no change in currency demand on the average. Figure (7.6) shows similar, but more steady rises in private expenditure and imports demand. Private investment rose by 12%, private consumption by 1.3% and aggregate imports by 2%; but changes in all three variables approach zero in the long-run.

Figure (7.5): Interest Rate Shock Effects on Currency

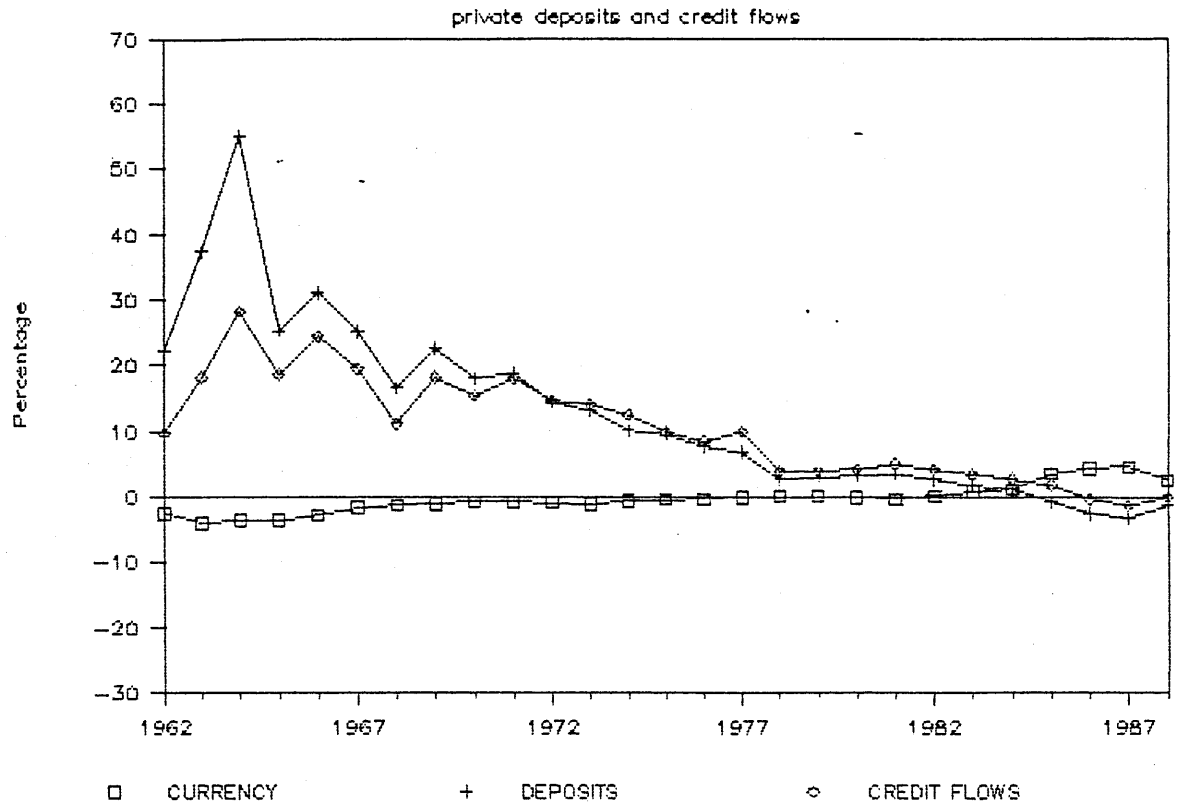
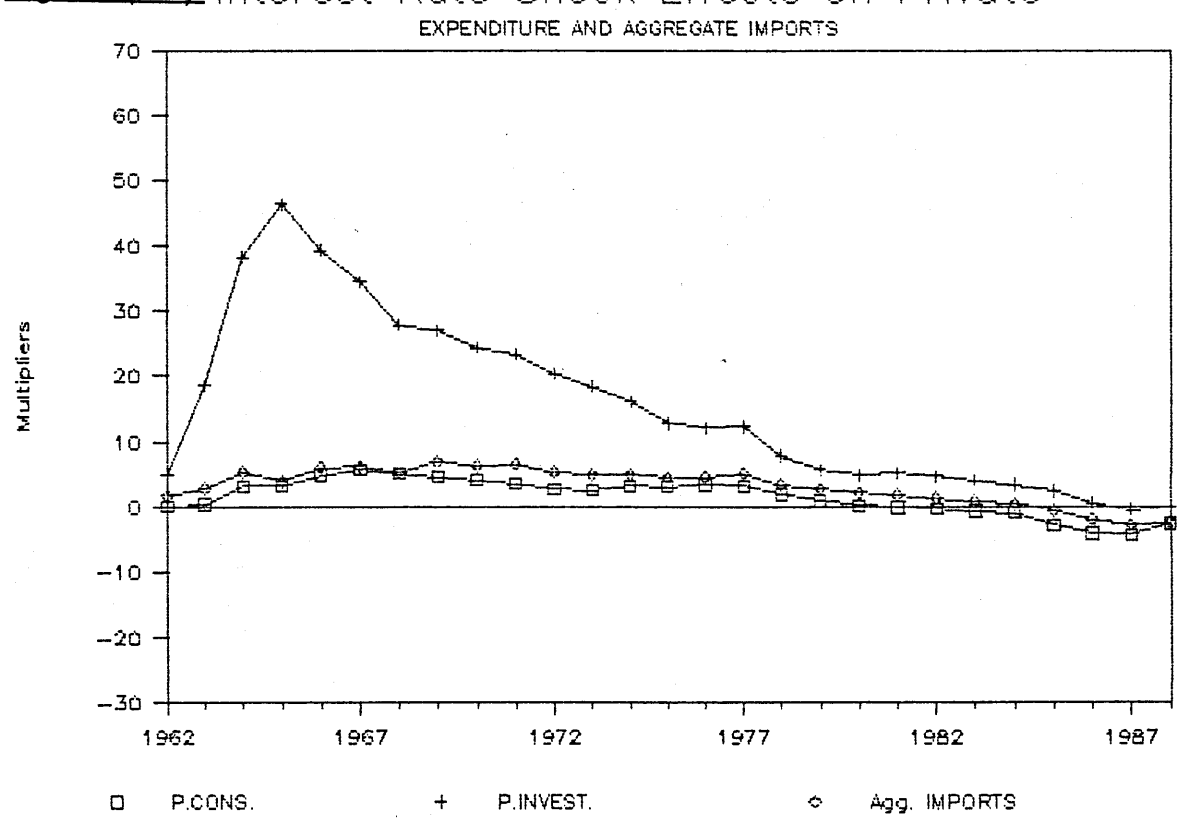
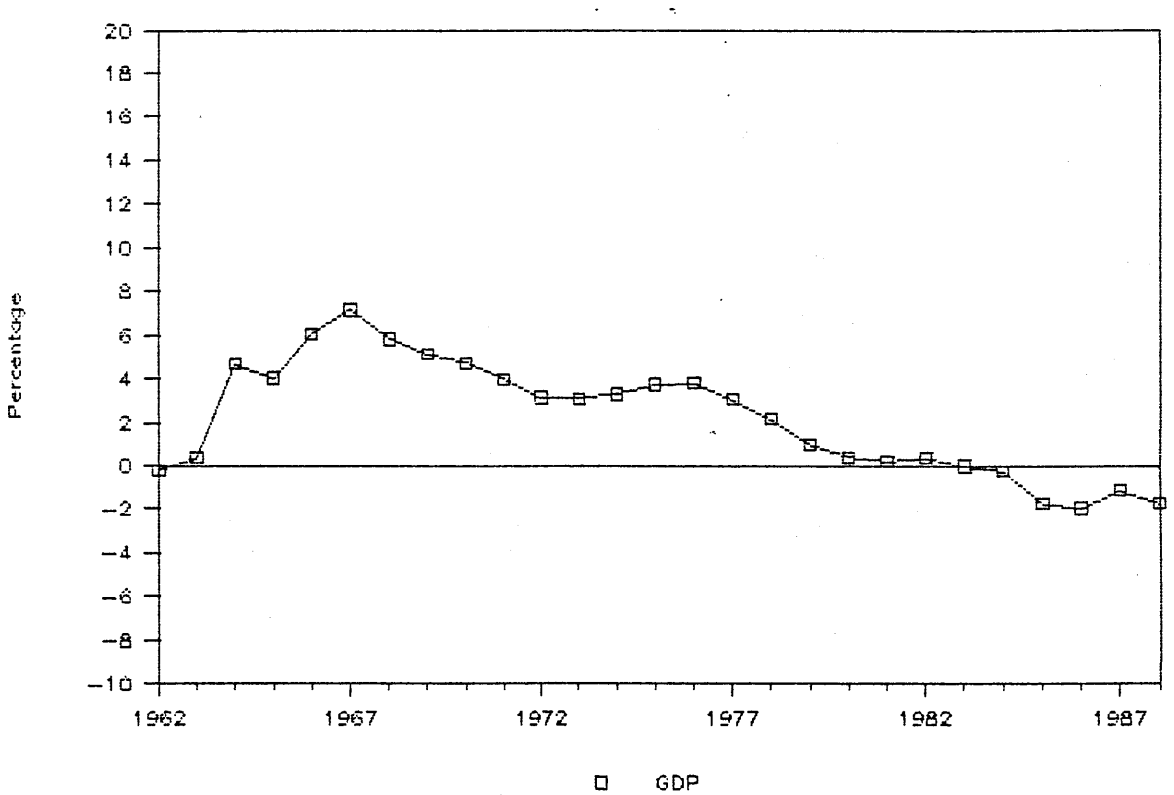


Figure (7.6): Interest Rate Shock Effects on Private



The relatively large increase in private investment is not astonishing, since the interest rates rise, which raises the credit multiplier by reducing the average reserves ratio, also causes credit to increase. Furthermore, as reserve-related deposits rise, both credit and money stock increase, generating further rises in investment; the direct negative impact of the interest rate on investment is much lower than its positive influence through credit and monetary assets accumulation. As imports increase, while exports remain at their base run level, there is a reduction in foreign reserves, which feeds through the reserve money identity to reduce banks' reserves and advances. But, nevertheless there is a net increase in credits.

Figure (7.7): Interest Rates Shock Effect on GDP



Although the rate of growth of real GDP turns to zero and then a negative in the period of high inflation, it averages 2.1% for the whole period (figure 7.7). In both the required reserves shock and the interest rate shock, there are substantial changes in investment, as opposed to consumption, but the overall effect of reserve requirements remain considerable over the long-run, while that of the rate of interest seems to be insignificant.

7.5.3 A Permanent Increase in Government Expenditure:

In the model, any increase in government expenditure over that of the base run will be financed through borrowing from the central bank and/or rises in tax revenue, resulting from increases in income. Be that as it may, the low-income elasticity of taxation indicates that the bulk of the increase in government expenditure has to be financed by borrowing from the central bank; borrowing from abroad being kept at its base run level. The government expenditure shock effects on the economy depend, to a large extent, on its method of financing. For example, if government expenditure increases were exactly matched by rises in tax revenue, private disposable income and consumtion will be directly affected. Alternatively, if the entire rise in government expenditure is financed by money creation, then there is an increase in reserve money, as well as bank reserves and credit. But, this would lead to high rates of inflation.

Figure (7.8) shows the effect of a permanent rise in government expenditure of Ls 100 mn (i.e., 18%) on GDP. As a component of aggregate income, government expenditure changes affect the economy directly via its impact on GDP. During the impact period, GDP grew at the average rate of 2%, and the value of the multiplier was 0.7. (The rate of GDP growth was 5%, and the multiplier was 1.8 when the model was simulated with inflation held constant.) The increase in GDP has been

Figure (7.8): Government Expenditure Shock Effect On

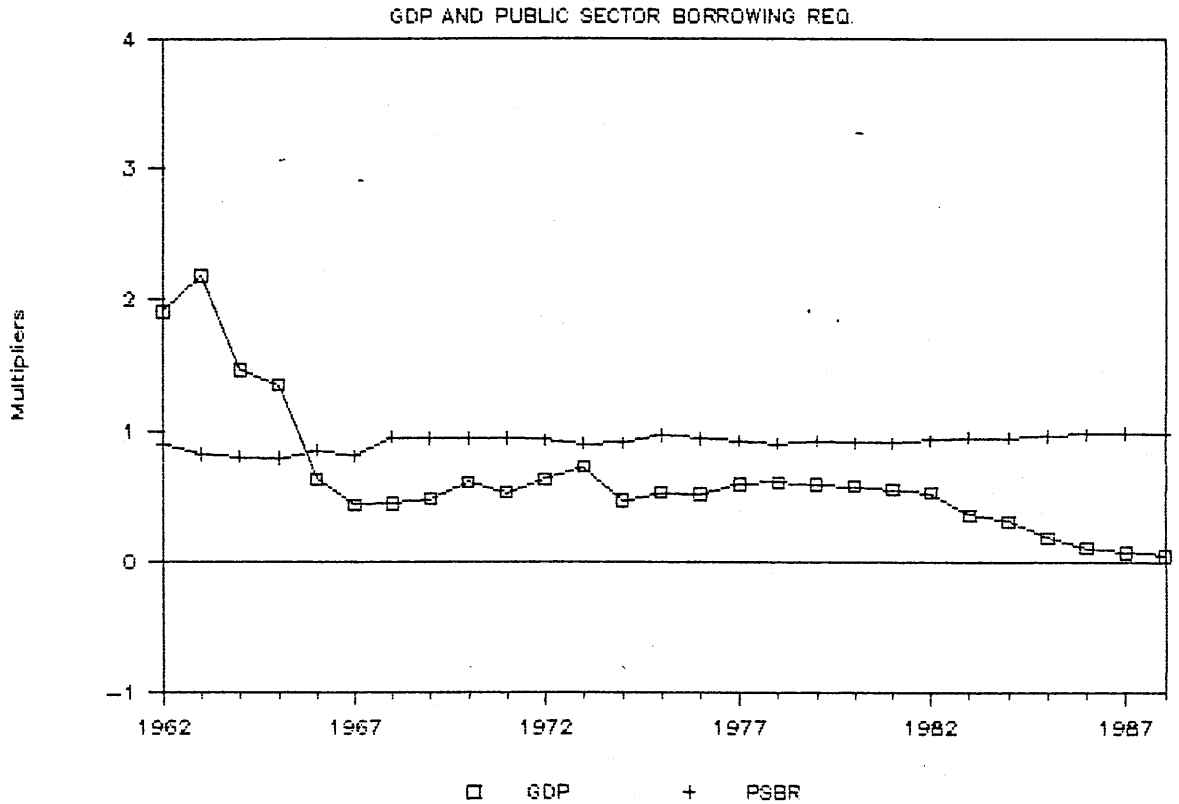
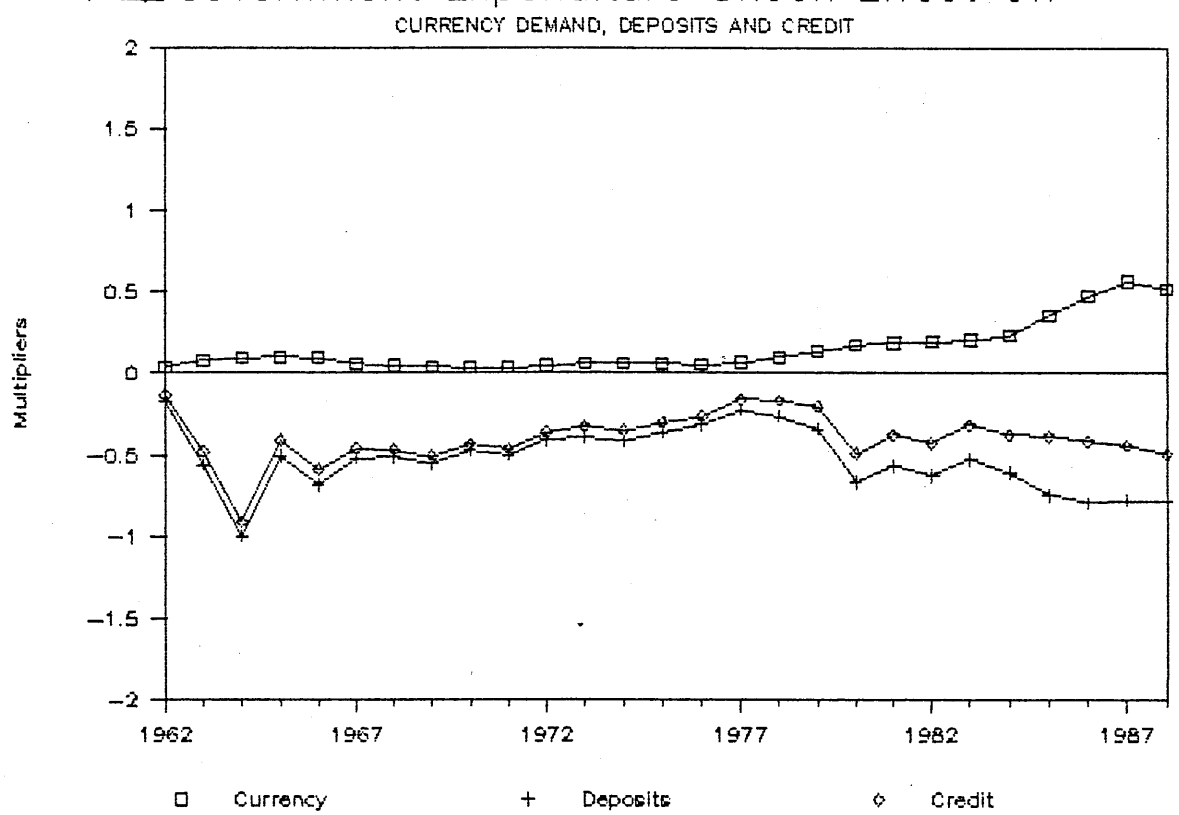


Figure (7.9): Government Expenditure Shock Effect On



accompanied by a permanent rise in public sector borrowing requirements, which averaged Ls 90 mn. Thus, it appears that, in the long-run, government-expenditure-induced rises in GDP generate just enough tax revenue to finance 10% of the entire increase in government spending. The rise in the central bank's advances to the public sector entails substantial decreases in commercial banks' credits to the private sector (Figure 7.9). This is so because rises in expenditure and income raise demand for currency, which, in turn, lowers bank reserves; although reserve money rises. Moreover, as imports increase, and exports remain unchanged, foreign reserves decrease, reducing reserve money, and thereby bank reserves and credit. The rate of fall in private credit, which averages 8%, was generally declining over time as the income effect on currency demand decreases.

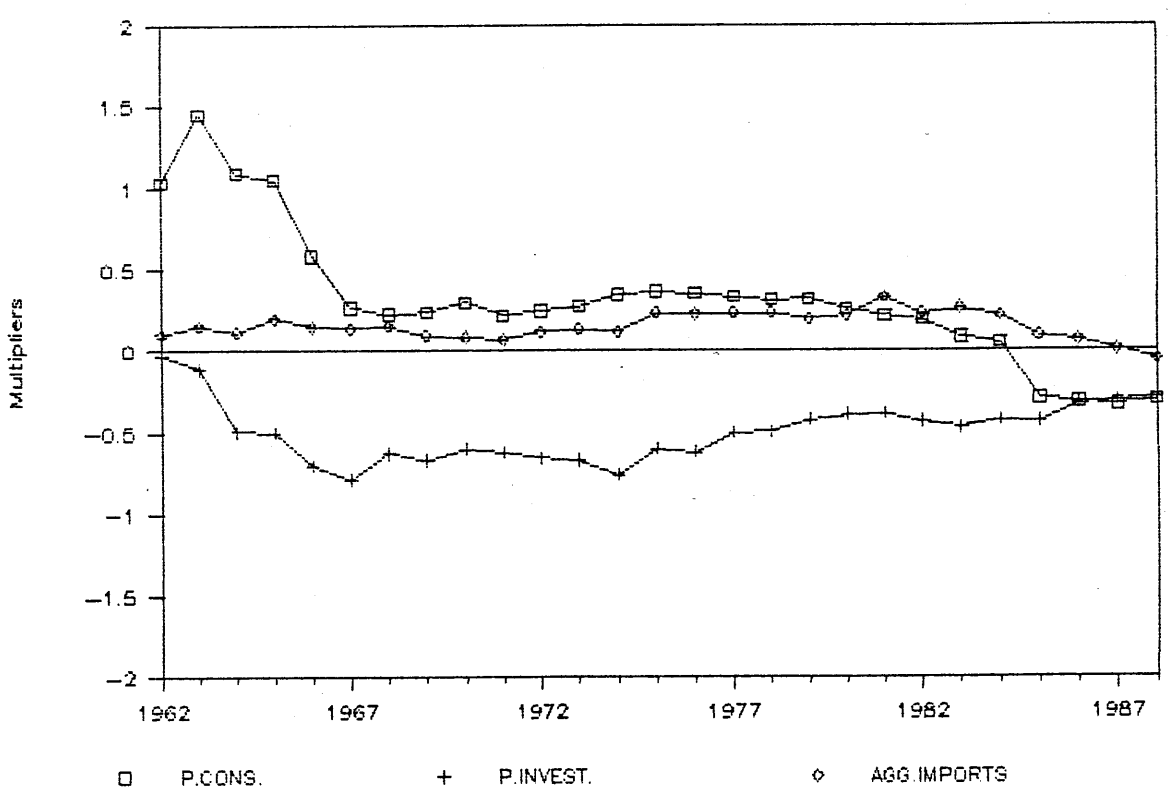
It is evident that there are two forces operating in opposite directions to influence private expenditure and imports; there are positive effects originating from rises in income, and negative influences resulting from the decline in credit flows. The overall impact of all these forces on private expenditure and imports was relatively small. Private consumption rose by 1.2%, while private investment fell by 10.7%. Aggregate imports rose by 2.5%.

These changes are shown in Figure (7.10) in the form of multipliers. The respective multipliers of consumption, investment and imports are 0.5, -0.6, and 0.15. It seems from the above simulation outcome that fluctuations in income and expenditure seem to depend on the level of inflation; it is interesting to note that inflation rose by the same average rate as government expenditure. In general, the multipliers fall in value as inflation rises. Government expenditure has a crowding-out effect, particularly with respect to private investment. This effect becomes more visible when inflation is already high, as it was the case in the 1980s. The net

decline in private investment, which decreases through a fall in credits, but increases as total monetary assets rise with government expenditure, is considerably high. In the balance, however, total absorption remains nearly unchanged as variations in private consumption and imports tend to cancel out changes in private investment.

In conclusion, fiscal expansion, financed largely by means of high-powered money creation, stimulates private consumption and lowers investment, with a negligible impact on GDP towards the end of the period. It must also be warned that such fiscal expansion would accelerate inflation if it is not associated with improvements in the productive base of the economy.

Figure (7.10): Government Expenditure Shock Effect on Private Expenditure and Aggregate Imports



7.5.4 An Increase in Tax Revenue:

Tax revenue is an endogenous variable in the model, i.e. determined within the system. To conduct this simulation experiment, we have adjusted the constant terms in the tax equation by Ls 50 mn, i.e. a permanent rise in tax revenue at the average rate of 11%.

Tax revenue changes affect the economy in many, and sometimes opposite, directions. Firstly, the increase in general taxes lowers disposable income, and thereby private consumption. Reduced absorption would constrict, though to a limited extent, income and output in subsequent periods. Secondly, increased tax revenue improves the position of the government, leading to lower rates of expansion of reserve money. As bank reserves decrease, so does the flow of credit to the private sector, which, in turn, affects private expenditure and income. But, if GDP decreases, currency demand will follow, raising banks' reserves and loans. Finally, any variation in actual real income relative to trend real income will lead to changes in excess demand, as well as the rate of inflation.

Figure (7.11) below shows a fall in GDP at the average rate of 0.01%, which is quite small. This is so, because as tax revenue rises, private consumption in particular decreases through lower disposable income, but in the long-run when income falls, inflation also decreases, raising consumption. The income multiplier with respect to the tax revenue shock is about -0.5.

As in figure (7.12) below, currency demand decreases, while private deposits and credit flows increase, with the rise in general tax revenue. Currency demand decreases at the rate of 1.7%, as income falls, private deposits rise by 3.4%, and credit flows by 3.2%. There are many influences on deposit and credit flows operating in opposite directions. On the one hand, any increase in general tax revenue, which lowers

Figure (7.11): Tax Revenue Shock Effect On GDP

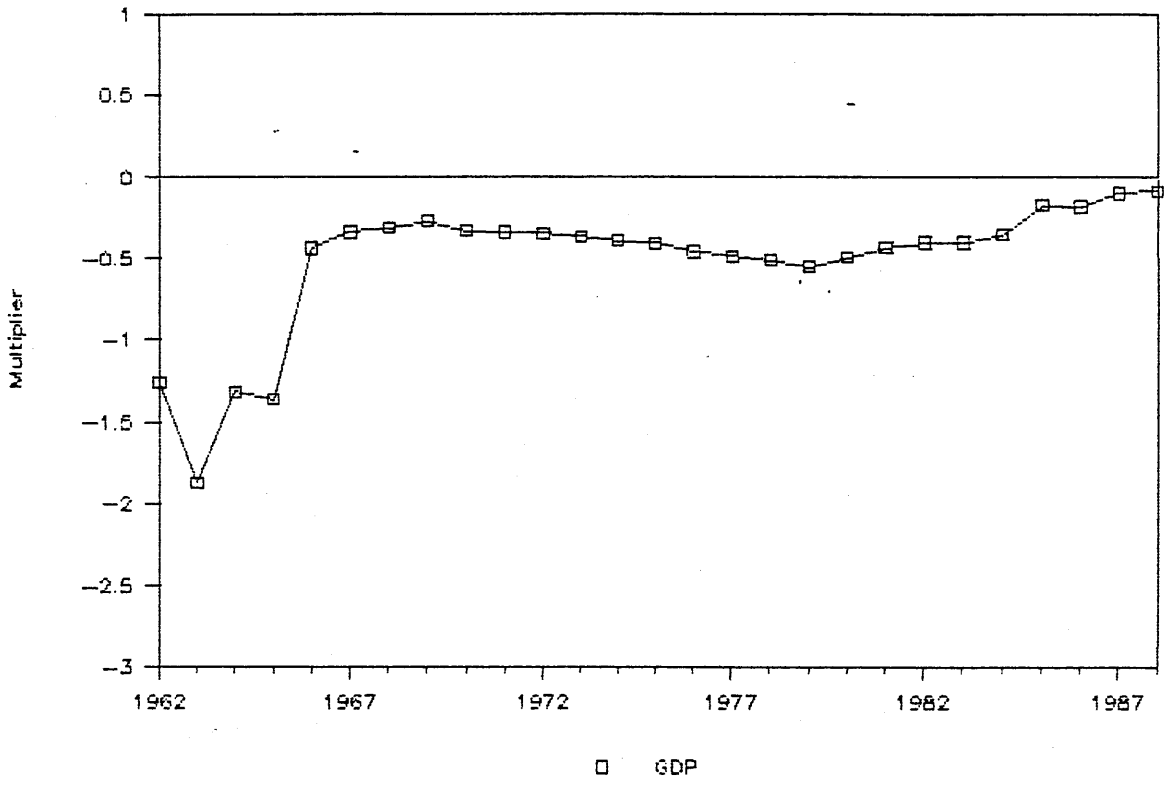
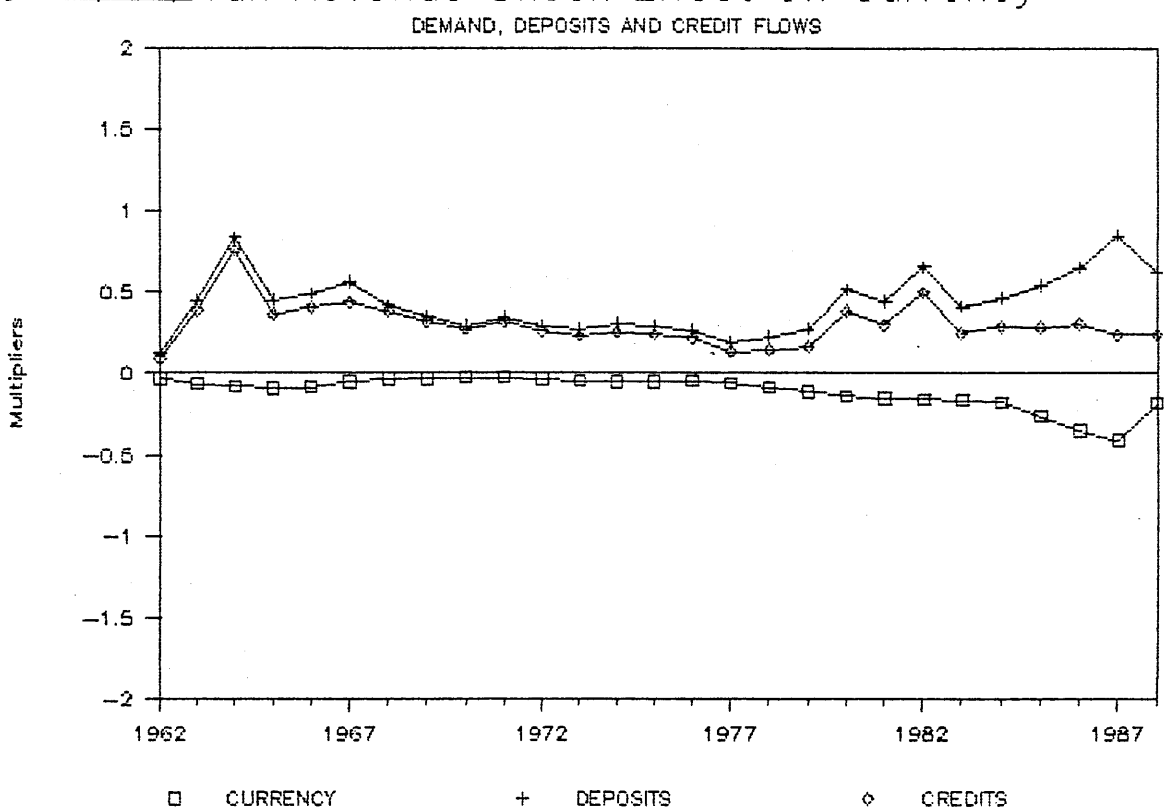


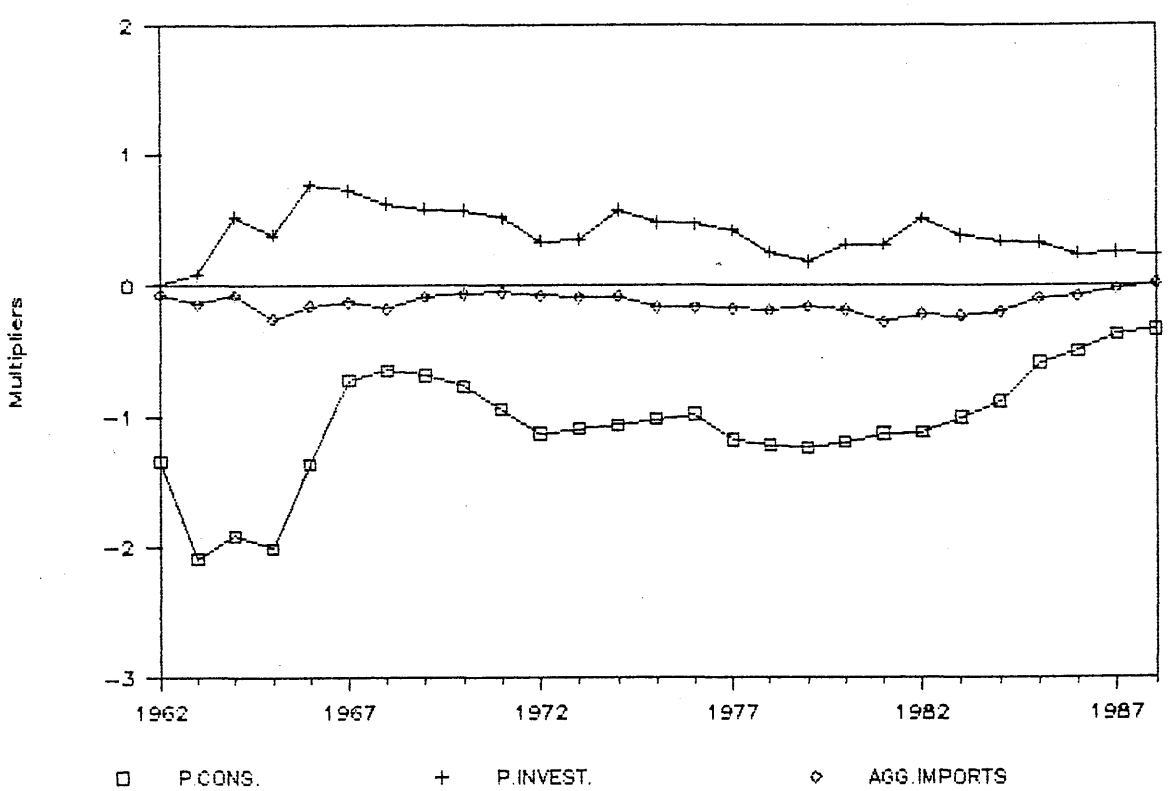
Figure (7.12): Tax Revenue Shock Effect On Currency



government budget deficit, reduces its borrowing from the central bank, and thereby reserve money on which bank reserves and credit depend. On the other hand, the fall in demand for currency, together with the increase in foreign reserves implied by falling imports relative to exports, leads to counter changes in high-powered money, as well as banks' reserves and credits. On the average, banks' reserves and credit rose, and as a result private investment also increased.

Figure (7.13) below shows the effect of tax rises on expenditure components. As this figure may attest, private consumption slipped by a multiple of -1.0, on the average, and total imports by -0.1, while private investment rose by a multiple of 0.5. In terms of percentages, consumption fell by 1.8%, and investment increased by 4%; because of the overwhelming share of consumption expenditure, total private

Figure (7.13): Tax Revenue Shock Effect On Private Expenditure and Aggregate Imports



expenditure has declined with rises in tax revenue. Therefore, it is obvious that the rise in general tax revenue is deflationary, because it reduces total private absorption in real terms, as well as aggregate imports and income. One important policy implication of this is that tax policy has to be selective.

To sum up, the simulation experiments indicate that private investment tends to respond to policy changes in a more sharp and permanent manner than private consumption. In the event of financial shocks, both consumption and investment moved in the same direction over most of the period. But, in the case of fiscal shocks the two moved in different directions; increases in government expenditure, as opposed to rises in tax revenue, induce consumtion and dampen investment. The overall results, thus, suggest that both fiscal and monetary policies can be used to influence real variables in the economy, but in the long-run, inflationary pressures would ensure that the effects of fiscal or monetary shocks are either moderated, or completely wiped out. This, however, seems to depend, to a good extent, on whether or not the rate of inflation is already high. In all simulation exercises, the resulting change in the inflation rate was moderate until 1977. Between 1978-88, however, there were conspicuous changes in the average inflation rate. It has risen by 18 percentage points under fiscal expansion, and by 16 percentage points when interest rates increased. With deflationary tax and reserve requirement policies, the inflation rate dropped by 6.4 and 14 percentage points, respectively.

As fiscal policy tends to have a more immediate impact on expenditure and income, it is not surprising that governments in LDCs rely on it more than on monetary policy in order to regulate their economies. But, it should be noted that the effectiveness of monetary policy requires relatively well-

functioning financial and capital markets. In the light of the evidence in our empirical model that monetary and financial policy could be used to influence expenditure and income, there is a good case for financial and capital markets to be developed, as there is also a case for the inflation rate to be kept low and stable.

Notes:

1. For example, Thirlwall (1974 and 1983) strongly advocates inflationary finance as a means of preventing economic stagnation in LDCs.
2. Elshibly (1984), and Dometriz and Elbadawi (1987).
3. For instance Laidler and O'Shea (1980), and Dalamagas (1990).
4. e,g. Blondal (1986), constructs and estimates a model for the Icelandic economy, which is credit-constrained.
5. These price deflators are GDP deflator, Consumer Price Index, Import Price index and export price index.
6. As mentioned earlier RM=C+R+GD; where GD represents government deposits. As government deposits represent its working transaction balances, they can be fairly stable on the average, and, therefore, exert no significant influence on the flow of reserve money.
7. The credit multiplier is derived as follows. From equation (7.5): TD=R+L-CBLB. But, ARR=R/TD. Therefore, TD=R/ARR, and substituting for TD in the above equation we get: L=[(1-ARR)/ARR]*R+CBLB.
8. We specify our model in terms of GDP rather than Gross National Product because of incomplete data on the latter.
9. This point has been stressed by Tobin (1978), and Flavin (1981).
10. The investment function is normally specified, following the accelerator and multiplier theories of investment, in terms of level and change in real income- see Levacic and Rebmann (1982), and C. Harvey (1977, PP.109-111) for determinants of various types of investment in African Countries in particular.
11. The former year witnessed the immediate impact of nationalization policies, and in 1983 the civil war restarted, and drought and famine accentuated, with considerable economic, and political unrest.
12. See e.g. Polak and Boissoneult (1959) and Keller (1980)
13. See Dutton (1971) and Aghevli and Khan (1977).
14. The data used come mainly from: (1) I.M.F, International Finacial Statistics; (2) World Bank, World Tables; (3) Bank of Sudan Annual Reports; and (4) The Economic Survey of the Ministry of Finance. All sources, however, rely on estimates prepared by the department of statistics, and the data are subject to a considerable margin of error. Though the data were taken at their face value, those used represent the latest (amended) figures.
15. As in Pagan and Hall (1983) and Pagan (1984). This method is exactly the opposite of the encompassing principle, which starts with a general unrestricted model that includes all variables the researcher wants, and tests for restrictions on the model to develop a parsimonious representation - See Mizon (1984)
16. See Hendry (1983).
17. For instance, Haque and Montiel (1989).
18. Empirical studies suggest that the interest-elasticity of investment

is generally low and insignificant in LDCs - see Aghevli *et al* (1979), and Wai and Wong (1982).

19. See Leamer and Stern (1970), P.8.

20. The model was simulated with the help of Semafore, which is a simulation package developed by the London School of Business (LBS) - see LBS (1990).

CHAPTER 8

SUMMARY, CONCLUSIONS AND POLICY ISSUES

8.1 Theory, Empirical Findings and Implications:

The purpose of this thesis has been to examine the significance of financial development in the economic growth of a developing country. Focusing on the experience of Sudan, the study attempted to analyse the determinants of financial development, and its contribution to real savings and capital formation during the period 1960-1988.

In our theoretical analysis, the economic importance of a financial system lies in its ability to enhance the saving-investment process. The absence of adequate links between surplus and deficit units would thwart this process, as direct lending is less likely to satisfy the preferences of various lenders and borrowers. Lenders wish to minimize default risk, maximize returns, and have liquidity in their assets. These considerations require substantial portfolio diversification. Borrowers, on the other hand, demand funds for certain periods of time, and at lower costs. The basis of financial intermediation is that it can create financial assets and liabilities to accommodate the requirements of both lenders and borrowers, and ensure the smooth operations of the economy. Financial instruments of various maturities help to reconcile the needs of both savers and investors, since short-term instruments, as against long-dated instruments, tend to be more liquid, less risky, but normally offer lower returns. Furthermore, with maturity transformation, it is possible for financial intermediaries to hold assets, that are generally less liquid than their liabilitiess. Maturity transformation is facilitated by relatively large-scale operations of financial intermediaries, and this also allows them to pool risks

associated with individual investors, harness small funds to finance large and long-term investments, and meanwhile entertain diversified portfolios. Moreover, via scale economies information advantages and specialization, financial intermediation is likely to increase returns to savers, and lower costs to borrowers. Financial institutions and instruments may, thus, help raise the rate, and improve the structure, of savings, and since they allow able entrepreneurs to undertake investment without a corresponding act of savings, they may also lead to improvements in the structure and efficiency of investment. In addition, through the provision of credit and non-credit services, financial intermediaries may also boost the growth of entrepreneurial skills, and thereby the rate of economic development.

The extent to which the evolution and growth of a financial system may stimulate economic growth seems to depend on whether it plays an initiative supply-leading role, or a passive demand-following function. The former phenomenon, in contrast to the latter, requires that financial institutions and instruments expand, generating substantial savings and efficiently allocating them among various investments necessary to engineer economic development. The empirical evidence examined in this study provides no clear conclusion concerning the causation between financial and real development, as the former appears to lead in some countries and follow in other, and the direction of causation seems to change over time, and not to be uni-directional in many cases. The question, however, remains how the financial sector could be made to play an active role in the economic development, of LDCs in particular?.

It has been claimed that financial deepening and widening in these countries, is constrained by government policy, particularly in the form of nominal interest rates control, which keeps real interest rates below their market-clearing

levels. The policy recommendation to developing countries, who wish to increase their rate of economic development, then, is to liberalize their financial and capital markets, by allowing financial variables to respond freely to changes in underlying market forces.

The argument for financial development and liberalization hinges crucially on the assumption that the resource mobilization and allocation mechanism built around financial institutions is optimal, in the sense that, left to themselves, and if competitive market conditions prevail, they would maximize returns to savers and minimize costs to borrowers. This would, in turn, positively influence the structure as well as the volume of savings. Assuming that investment in LDCs is constrained by the lack of savings, and since higher interest rates release resources from less efficient uses, both the structure and average productivity of investment would improve.

This hypothesis, however, does not account for a number of endogenous as well as exogenous factors that can seriously limit the ability of financial markets to play a leading part in economic development in LDCs, even when they are free from interest rate and other restrictions. Because of such market imperfections as insufficient information, liberal credit institutions may tend to ration loans on non-price basis, favouring well-established enterprises at the expense of new and innovative activities. Market forces may also fail to bring about a financial structure that is conducive to real development. Developing countries need development or long-term finance, but, where commercial banks dominate the financial structure, with no guarantees of substantial maturity transformation, financial markets would have little contribution to real development financing. In addition, being entirely profit-minded, financial intermediaries may not provide technical and other assistance required for the

growth of entrepreneurship.

Thus, there always appears to be a need for government intervention in order to influence banking behaviour, and to set up financial institutions and instruments that are more geared to providing long-term capital, and non-capital services, to the business sector. Again, financial intermediaries, which allocate investible funds according to a financial criteria, may not adequately observe the economic and social priorities of a developing country, where resources are quite scarce, needs are vast, and a highly unequal distribution of income is the norm. These considerations provide a case for financial regulation, which should as far as possible try to avoid repression. But, the argument for financial regulation gains support from the empirical evidence discussed in chapter 2, which finds financial liberalization, especially through full deregulation, to be destabilizing.

In the context of Sudan, where intractable macroeconomic problems are plenty, the financial sector is limited in scope, structure, and strategic functions. The Sudanese economy has been on the decline since the late 1970s; the real rate of economic growth between 1978 and 1988 was negative averaging 0.8%. Infrastructural bottlenecks, especially in the sphere of transport, communication and energy, presented serious constraints on development activity, and the economy remained underdeveloped, with the share of industrial output in GDP well under 10% over the period 1978-88. The gross domestic investment rate was 15% between 1971-88. Nevertheless, successive development plans failed to address the issue of structural imbalances, because they relied, excessively, on foreign capital, which financed about 50% of total investment, but it was either tied to projects initiated by donors, or to the purchase of certain goods. In effect, the performance of the development

projects, that were actually implemented, was adversely affected by the lack of supporting services, and necessary inputs, and they failed to generate enough surplus for subsequent debt-servicing. The official foreign debt of Sudan amounted to $11 billion in 1988, while there had been persistent balance of payments disequilibria throughout the last decade.

Civil war, political instability, and overexpansion of employment in the public sector have all contributed to rising current government expenditure, and deficits. This, added to unforthcoming foreign savings, made development planning on the part of the government irrelevant, and money creation to finance the deficit uncontrollable; the central bank Act was amended several times to ensure its effective control by the government. The government and most of the public enterprises being unable to manage their deficits, private initiatives were badly needed to foster economic development.

But, monetary and financial policy was largely driven by the financing of public deficit and ensuing inflation, especially in the 1980s, to the detriment of private economic activities and the long-term development of financial and capital markets. In particular the pursuit of short-term stabilization measures and constraints on bank lending and other activities overrode any deliberation of promoting and furthering the role of the financial sector in economic development. It has been argued in chapter 4 that official monetary policy had, since the 1970 nationalization Act and despite the denationalization measures, been vague about the promotion of financial institutions, and instruments. Various policy proposals were preoccupied with the control of banking facilities in order to accomodate the requirements of public enterprises. The financial system continued to be improportionately dominated by commercial banks, and the

share of non-bank financial intermediaries is not great. The saving and credit activities of development banks were modest and declining, because they failed to compete with commercial banks, and to cope with the introduction of Islamic methods of finance.

It was shown in chapter 4, however, that commercial banks had attracted considerable increases in total deposits. But, the composition of these deposits was overwhelmingly in favour of current deposits. The reasons being low rates of interest/profit, and banks own policy under strict credit ceilings. The allocation of commercial banks' funds was heavily geared towards short-term loans, with medium and long-term credit amounting to just 15% of total bank advances. This deposit and credit trend continued when banks were comprehensively regulated as well as when they were relatively free from restrictions, including interest rate and foreign exchanges control, during the late 1970s and early 1980s. Accordingly, we argued that if banks were to play a more profound role in development financing, well-guided banking regulation may be indispensable.

A major change in banking structure, and to some extent banking operations, was brought about by the introduction of Islamic banking in 1978. The principal departure of Islamic banks, and Islamic finance in general, from conventional banks is the abolition of fixed interest rates. Consequently, Islamic banks have to find financial instruments, on both the liabilities and assets sides, that do not depend on interest rates. As Islam allows trade and profit-making and encourages risk-sharing, returns to the various parties involved in financial arrangements are related to the profit/loss realized from real investment. Instruments of the Islamic profit-and-loss-sharing (PLS) system, which calls for participation, necessitate extended involvement of banks in businesses. This, frequently, entails banks providing non-

credit services, i.e. technical, managerial, financial ..etc. assistance, which may mitigate inefficiencies resulting from information imperfection and enhance the development of entrepreneurship. It was also argued in this study that the principle of participation, which eliminates conflicts in the interests of borrowers and lenders, might boost investment via equity finance. But, variable return on savings may raise uncertainty, and discourage their growth. This would be the case unless the two sources of uncertainty, nominal return and inflation, are positively correlated. Moreover, PLS instruments may imply higher operational costs to banks, and they are less liquid compared to conventional instruments. Should Islamic banks, however, exist alongside the traditional ones, the definite outcome would be the widening of financial markets, with greater degree of competition and benefits to the economy as a whole. If, on the other hand, the entire financial system is to follow the Islamic principles, a securities market needs to be devised for Islamic financial institutions to overcome the liquidity, and cost problems, by making their instruments of finance transferable. In addition, there was also a case for the securities market in LDCs in general, and in Sudan in particular. This case is based on the limitations of debt finance by commercial banks, and on the fact that such market may be more equipped to generate funds for longer term or development finance, promote entrepreneurial talents through competition, and improve income distribution by widening access to credit as well as the ownership of economic enterprises. A securities market can also enlarge the scope of monetary policy and augment its effectiveness.

In the unstable economic and political environment in Sudan, however, a securities market can only be perceived as part of an overall macroeconomic strategy for economic stabilization and growth. But, as we have stressed in chapter

6, there is no compelling theoretical reason to believe that such a market would be inefficient should the idea be rooted in strong conviction, and the market promoted by all parties concerned, i.e. the government and the private sector.

On the empirical side, Islamic banks have a better composition of funds than conventional banks, and so far seem to have contributed comparatively more substantially to real capital formation - if only for the promotion of the Islamic ideals, which they have set for themselves. We concluded that the experience of Islamic banks in Sudan is of relatively recent origin, and hence the continuity of their present strategies can only be properly judged after the lapse of a reasonably longer period of practice.

This study has constructed, estimated and simulated a macroeconomic model of the Sudanese economy, the aim of which was to investigate quantitatively the behavior of key financial variables, and their interaction with expenditure variables. On the financial side, the model elaborates the role of government borrowing in generating high-powered money, and examines the behavior of banks in keeping reserves and extending credit as well as the behaviour of the non-bank private sector in terms of its demand for real cash balances. On the expenditure side, there are functions for private consumption, private investment, and imports demand. Moreover, the model also contained an equation for government tax revenue, and a supply side measure represented by the behaviour of the consumer price inflation, as determined, among others, by the extent of excess demand for output in the economy. A major feature of the model is the direct transmission of monetary policy, which influences expenditure and output via credit availability, and this is implied by interest rates control. The main findings of the estimated model were:

1. The rate of interest has no significant impact on the

demand for real cash balances, and private consumption expenditure. But, it has a significant negative effect on private investment; and this effect is mitigated through the negative impact of the rate of interest on the average reserves ratio, on which the credit multiplier and credit expansion depend. Notwithstanding this, the average reserves ratio, and thereby the credit multiplier, are determined mainly by the required reserves policy.

2. Increased bank lending raises private expenditure and imports, but the coefficient of bank loans is high (0.561) and statistically significant only in the case of investment. While the inverse relationship between the rate of interest and private capital formation negates the repressionist hypothesis, there is evidence in the model that the accumulation of financial savings (approximated by M_2) can boost investment. The coefficient of M_2 with respect to private investment was both significant and large (1.133).

3. Consumer price inflation displays a unitary long-run elasticity with respect to excess demand, as measured by the difference between actual and trend real output. Inflation has a negative influence on real private consumption, as well as government revenue from taxation. The latter relationship implies that government deficit will widen as inflation rises, assuming that government expenditure is fixed in real terms.

4. The long-run income elasticity of private consumption was found to be about unity, indicating that private consumption would increase by the same proportion as disposable income in the long-run. The long-run income elasticity of demand for imports was also close to unity. The short-run income elasticities of consumption and imports were 0.6 and 0.38 respectively. The short-run and long-run income elasticities of taxation were similar to those of import demand.

The results of the simulation experiments suggest that both monetary and fiscal policies may be used to influence expenditure and output; the policy variables considered are reserves requirements, interest/profit rates, government expenditure, and taxation. Monetary shocks tend to have a uniform influence on consumption and investment over most of the period under review, while rises in government expenditure, as opposed to increases in tax revenue, induce consumption with a crowding-out effect on investment. Meanwhile, the relatively low rate of income-elasticity of tax revenue implies that a substantial proportion of any increase in government expenditure would have to be financed through borrowing from the central bank. The implications of the simulations results, among other things, on monetary and financial policy in particular are highlighted below.

8.2 Direction of Monetary and Financial Policy:

In the empirical model, and in view of the structure of the Sudanese financial system, instruments of indirect monetary control are limited. Meanwhile, the application of the instruments of direct monetary control by the authorities had been, grossly, inefficient in resolving the conflict between economic stabilization and growth. The main instruments of indirect monetary control available to the authorities were reserve requirements, interest rates and the discount rate. Binding credit ceilings make the discount rate redundant, as commercial banks suffer from excess liquidity rather than the reverse. But, legal reserve requirements have been actively used in recent years. The main implications of the analysis in this study for the direction of monetary and financial policy may be summarized in the following:

1. As the results of our model indicate, changes in legal reserves requirements lead to relatively large shifts in commercial banks assets, reducing in particular credit to the

private sector. This policy clearly needs time if it is not to be disruptive. By forcing commercial banks to keep sizeable funds idle, and if banks are not compensated, high reserve requirements would raise the cost of financial intermediation, and inhibit the development of formal financial institutions in favour of curbmarkets and non-bank financial intermediaries, which are less amenable to monetary control. Therefore, the use of reserves requirements for short-term stabilization could disrupt long-term financial and real development, and should be avoided or regarded with caution

2. The rate of interest had, always, been determined by the authorities, but it has become less important with the advent of Islamic finance. Interest rates fixing, combined with direct quantitative control over bank lending, does not only discourage the growth of financial intermediaries, but also leads to less efficient composition and uses of financial savings. To maximize their profits, commercial banks had, often, refused to accept interest-or-profit-bearing deposits, although these deposits are more suitable for long-term or development finance. This behaviour on the part of banks was justifiable, because, within the ceiling, they can rely on funds in current accounts only to earn a commission income as well as interest or profit from short-term loans. Since short-term lending is more inflationary than long-term lending, which is thus discouraged, the policy of promoting stability and growth through interest rate fixing and credit ceiling is, obviously, self-defeating. Similarly, the selective credit policy, which fails to identify profitable projects within the priority sectors, can hardly stimulate the flow of funds to them. If quantitative credit control is necessary, its criteria should also pay special consideration to the composition of bank liabilities and assets; long-term deposits and finance ought to be fully exempted from the

ceiling, or the ceiling be progressively widening with their increase.

3. It emerges from the discussion that if banking regulation is to be justifiable it should be genuine, and if monetary policy is to be successful, it must also aim at the long-term widening and deepening of the geographical and functional scope of financial and capital markets. The promotion of a securities market may be essential for a financial system based on Islamic principle, but equity institutions and non-credit financial functions should also be enhanced. This inevitably requires a central bank with a greater degree of autonomy in policy design and implementation, and an understanding that *adhoc* monetary and financial policy serves no useful purpose.

4. There are no provisions in the central bank Act to regulate and/or promote the activities of Islamic banks and non-bank financial intermediaries in particular. This has been the case although the entire financial system was instructed in 1984 to observe the Islamic principles of finance. Obviously, there is an urgent need for this Act to be amended, and the central bank to be involved in the Islamization move if Islamic finance is to be well guided in the interest of the national economy.

5. Similarly, as seen in chapter 3, there have been no detailed projections of private finance in general, and savings and investment in particular, in national development plans. Thus, if future economic progress is to be contemplated, and planning to be adopted as a means, detailed studies of private financial flows ought to be made, possibly in the context of flow of funds tables for the whole economy.

6 The monetary authorities have consistently failed to confront the problem of massive domestic borrowing by the government and public enterprises, some of which have been in the red throughout their life time. It is of utmost economic

importance that failing public enterprises be liquidated if they can only survive by means of cheap loans at the expense of more competitive firms. Likewise, government borrowing from the banking sector should be brought under control, for the conflict between public deficit financing, stabilization and long-term financial development to be reconciled.

The issue of government deficits needs a fundamental restructuring of government finance. On the expenditure side fiscal reform is necessary to bring government expenditure in line with its real revenues. On the revenue side, although the policy of high general taxes is deflationary, there is a good point for selective taxation. The rich classes in Sudan appear to have high consumption propensities and a quite low saving rate. Progressive taxes on certain classes of income, given appropriate expenditure control by the government, may well raise the rate of national savings. Moreover, with the spread of Islamic banks, it may be possible for the government to finance a significant proportion of well-studied development projects, with identifiable returns, through banks' participation.

7. In all the simulation results of the empirical model, the impact of policy shocks on real absorption and output seems to depend on the level of inflation; when the prevailing rate of inflation is considerably high, as it was the case during the 1980s, policy effects are rapidly neutralized. A major policy implication of this is that, measures, financial or otherwise, to increase the rate of economic growth should not only aim at stimulating aggregate demand, but also attempt to intensify the productive capacity, or the supply side, of the economy.

The overall conclusion of this study is that financial development may be necessary in the economic development of a growing economy. But, in an economy like that of Sudan, the role of financial institutions and instruments in the process

of economic development may only be successfully promoted in the context of clear macroeconomic strategies that adequately address in particular infrastructural obstacles, and economic instability.

8.3 Suggestions For Further Research:

One of the limitations of the present study is that it is primarily concerned with the development and performance of the modern financial sector of Sudan, and its interaction with the expenditure sector. However, the Sudanese economy is based on traditional agriculture and animal husbandry. The exact size of the traditional sector is unknown, and its role in the economy as a whole is hardly acknowledged at the level of national planning. This has been the case although this sector provides employment, income, and basic necessity goods for more than half of the population of the country, and contributes significantly to aggregate exports as well as the input requirements of the modern sector. Meanwhile, the traditional sector has very little import requirements in terms of both consumption and production.

The traditional methods of production and finance of this sector are too backward to engender progress, so that its modernization and development require deliberate and well-prepared programmes of action involving both the government and the private sector, particularly banks. Government action in this respect has, so far, been limited to the Agricultural Bank of Sudan, which was set up to provide credit and non-credit services to indigenous producers. The bank, with its meagre capital and inability to mobilize sufficient savings, has provided little support to the rapidly degenerating traditional agriculture, while, as this study indicated, commercial banks' credits were consistently and excessively in favour of urban and relatively large-scale modern enterprises. Adverse conditions of production in the

traditional sector, coupled with successive waves of drought and the civil war, have resulted in tragic famines in 1984 and 1991, with mass rural-urban migration, which has a compound effect on food shortages. The modern sector failed to provide jobs to the armies of peasants who deserted their villages and farms. Future economic development may only be facilitated if these problems are contained, and the traditional sector rehabilitated and modernized. And as Maxwell and Buchanan-Smith (1991) put it:

> "Development is the best antidote to famine, and the best of development provides poor people with secure and sustainable livelihood" (P.23).

It remains a good area for future research to investigate, in detail, the nature and requirements of the traditional sector of the Sudanese economy, and the means by which it can be reactivated, modernized and integrated into the modern network of economic enterprises.

The research would attempt, first, to assess the size and importance of the traditional sector in the national economy. Second, to underline its financial needs, and explore approaches to mobilize funds within and from outside this sector. Third, to consider the organization of the traditional sector and its incorporation in national development plans; with the understanding that the development of the entire economy might only be possible when the strategic function of this sector is secured. Moreover, proper attention to the traditional sector at the level of national plans in particular and economic policy in general is necessary, because the allocation of development projects and credit facilities may well dictate the pattern of income distribution. Fourth, the research would also try to examine the need for, and the plausibility of, specialized government

bodies as well as policies to influence formal financial institutions to provide various credit and non-credit (i.e. technical, marketing, storage.....etc) assistance to traditional producers. Being left to indigenous traders, producers in the traditional sector are vulnerable to exploitation, particularly in terms of low prices, which destroys incentives for increased production, or even maintenance of existing production capacities. Fifth, and as it emerges from the present study, future research would attempt to determine how the acclaimed commitment of Islamic banks to economic equity and development, and their techniques can be utilized to provide a basis for rural finance. Finally, the research would attempt to examine how the process of dynamic economic progress can be boosted via entrepreneurial development, and enterprise initiatives in connection with rural or traditional economic activities. This may be related to the issue of attracting increased bank participation in rural finance.

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Appendix 1:

Fixed-Price Simulation Results

Figure (1.1): Required Reserves Shock Effect On

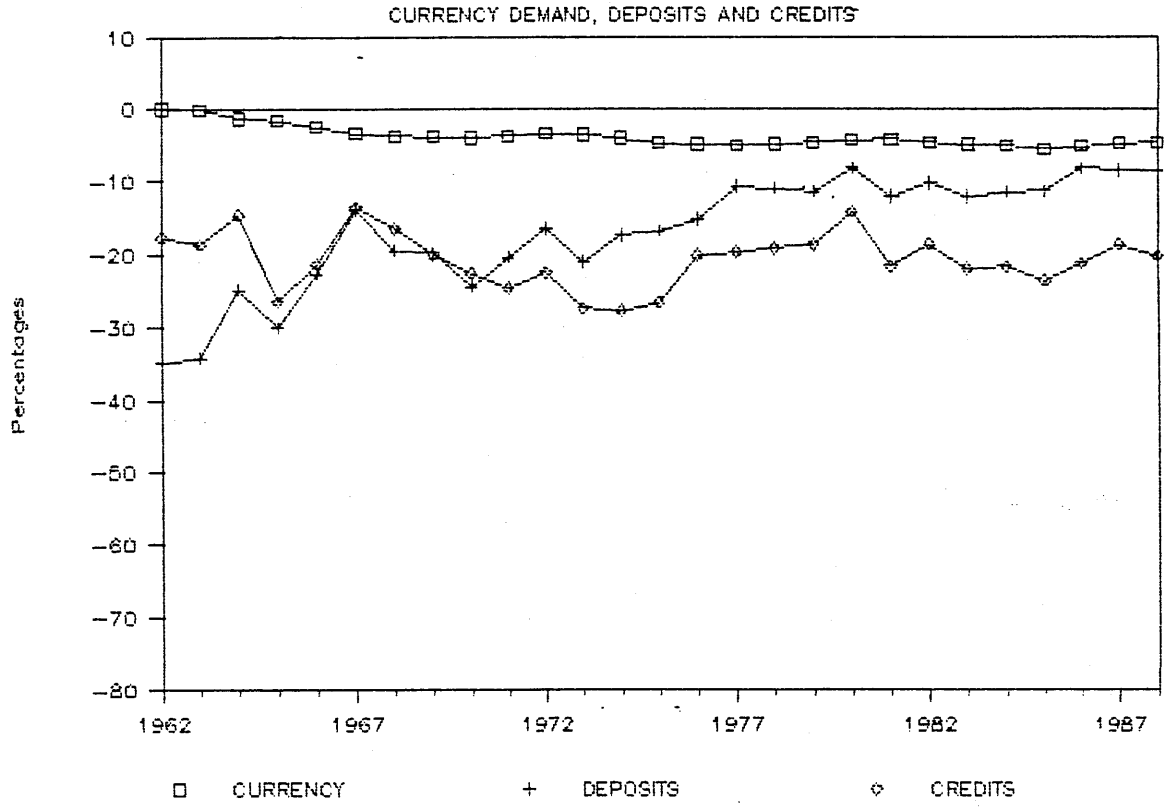


Figure (1.2): Required Reserves Shock Effect On

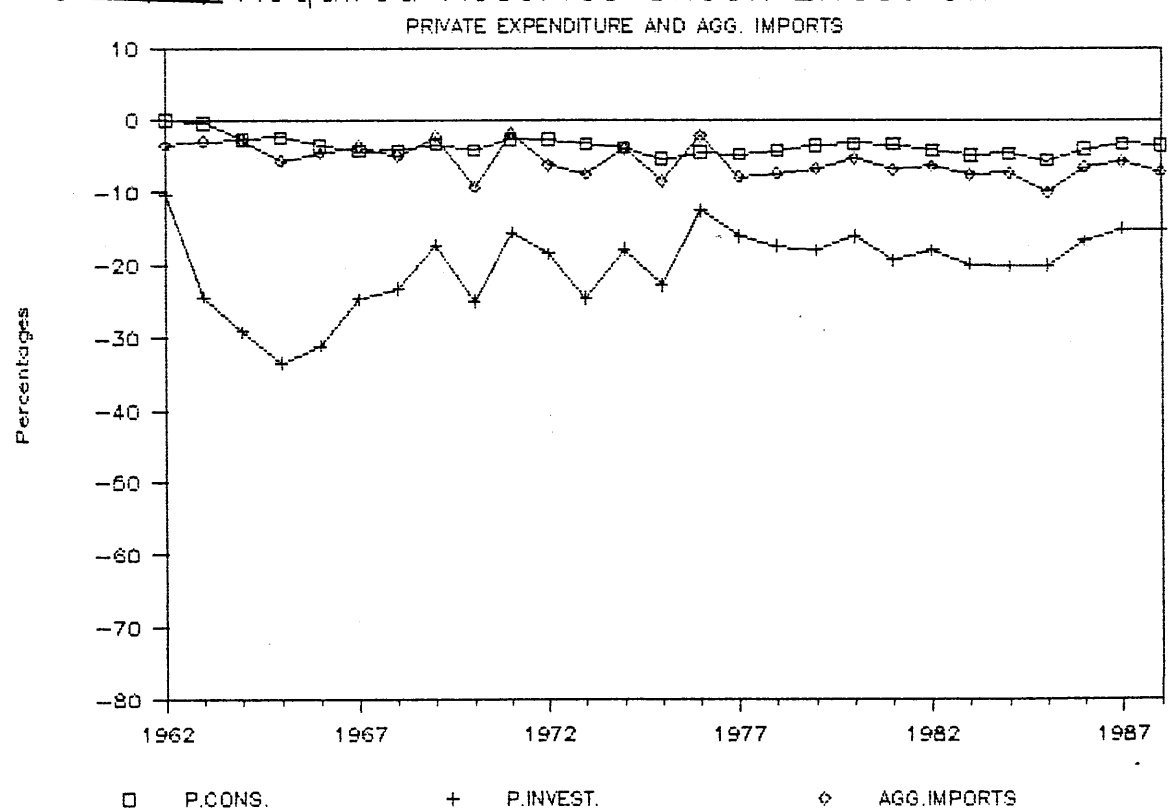


Figure (1.3): Required Reserves Shock Effect On GDP

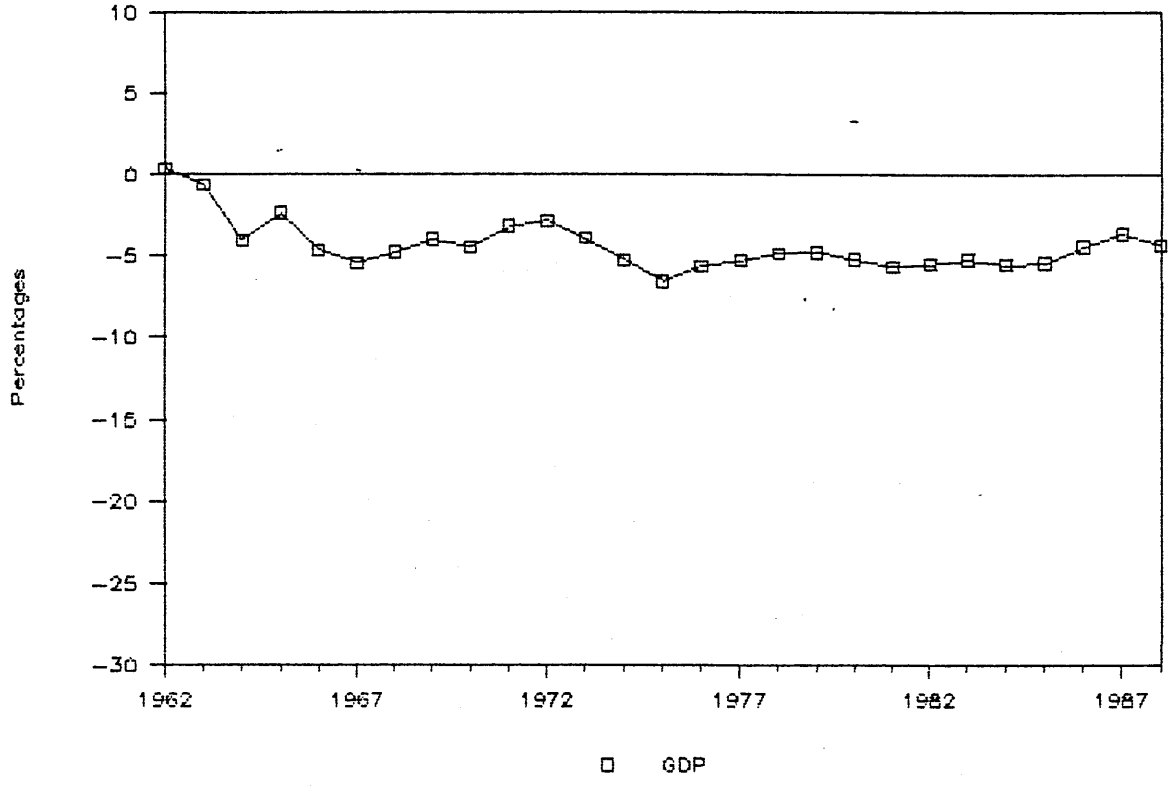


Figure (1.4): Interest Rate Shock Effect On Currency

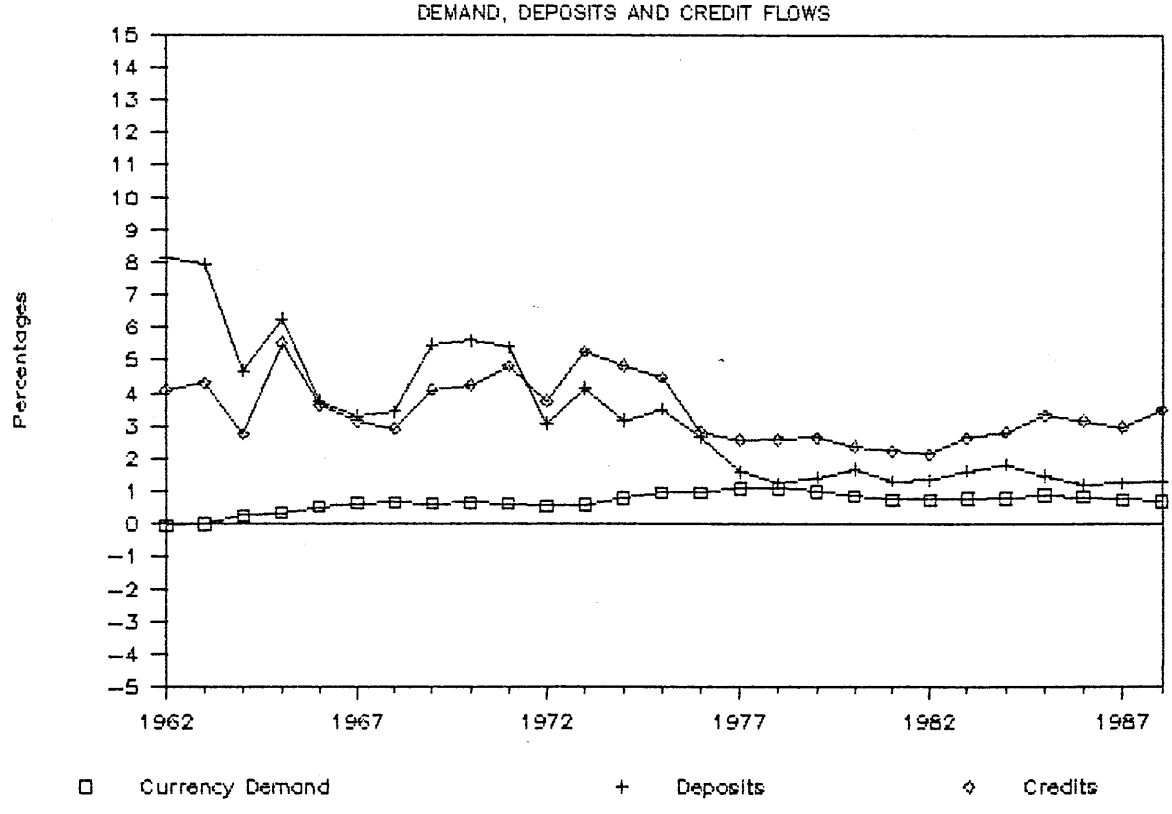


Figure (1.5): Interest Rate Shock Effect On Private EXPENDITURE AND TOTAL IMPORTS

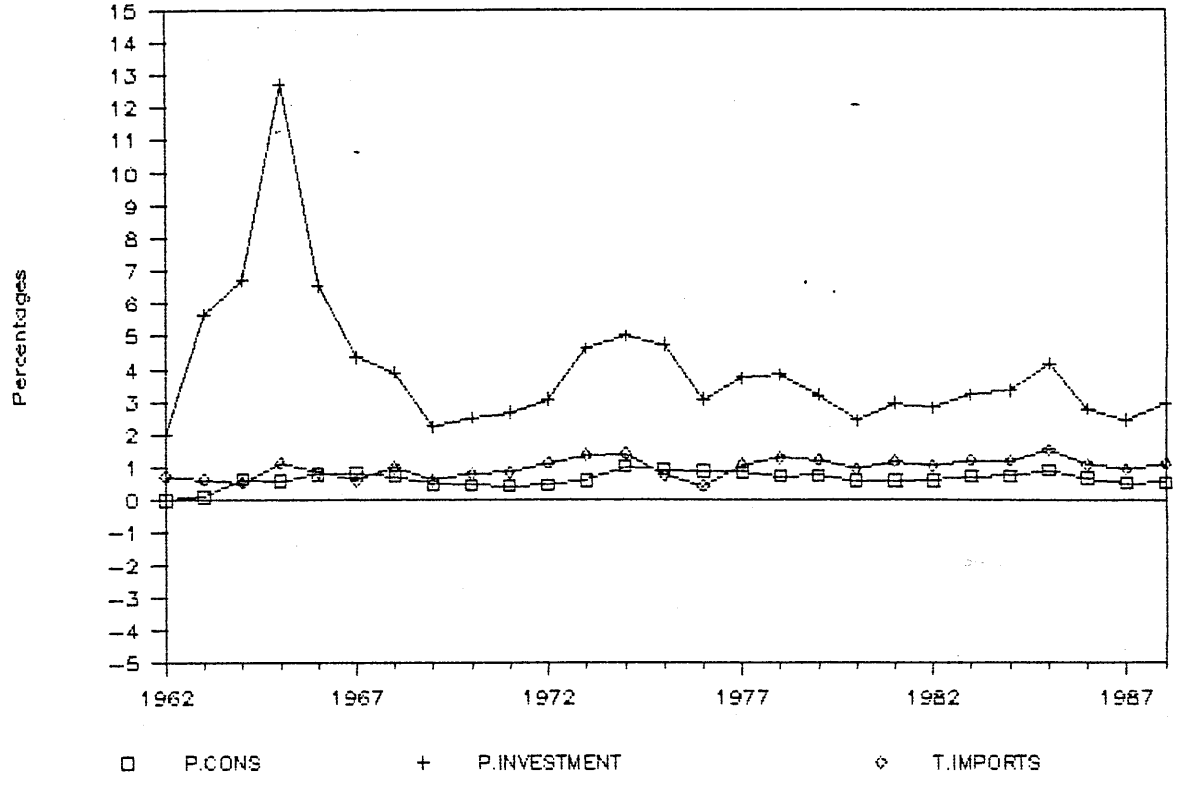


Figure (1.6): Interest Rate Shock Effect On GDP

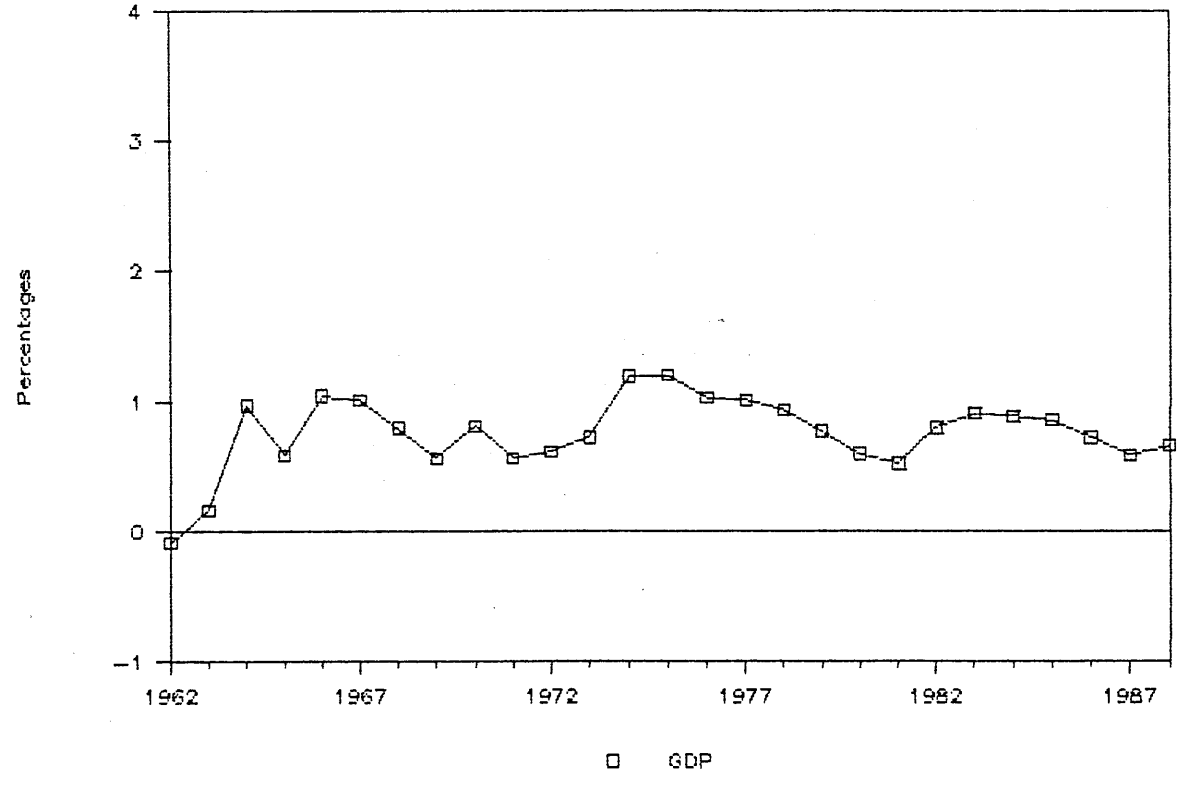


Figure (1.7): Government Expenditure Shock Effect On

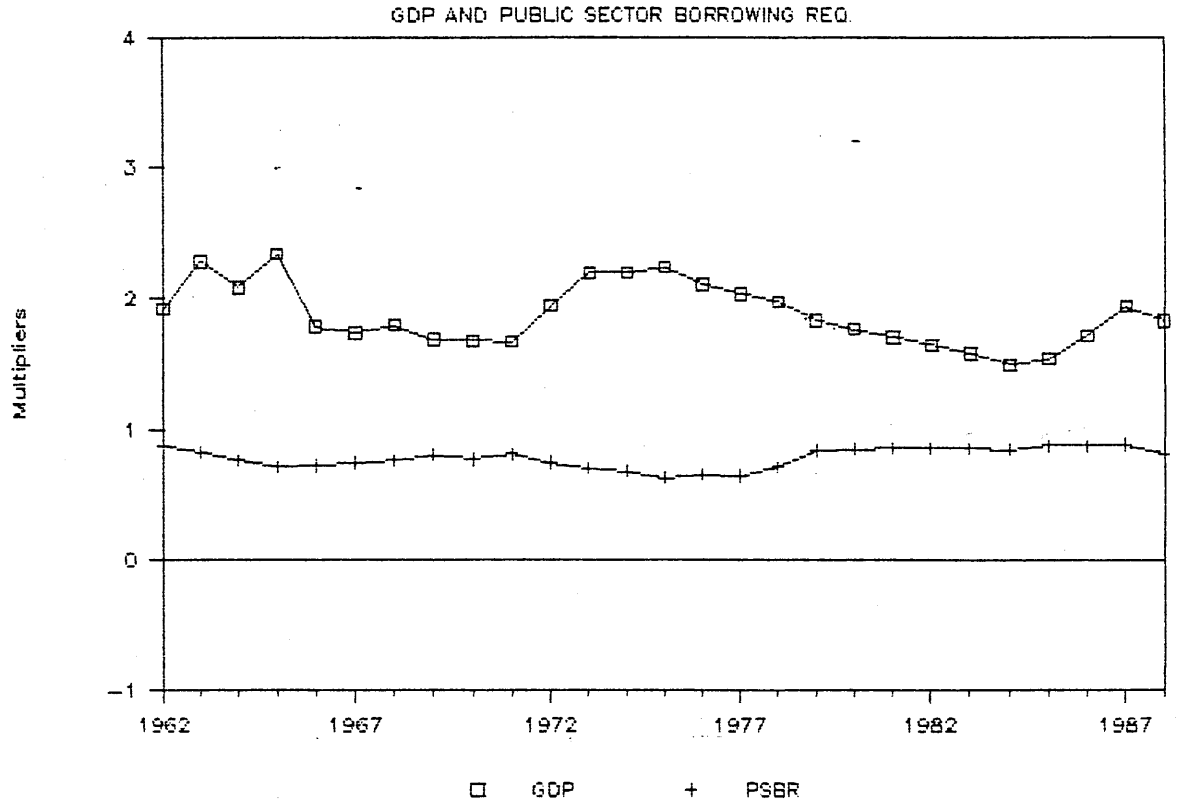


Figure (1.8): Government Expenditure Shock Effect On

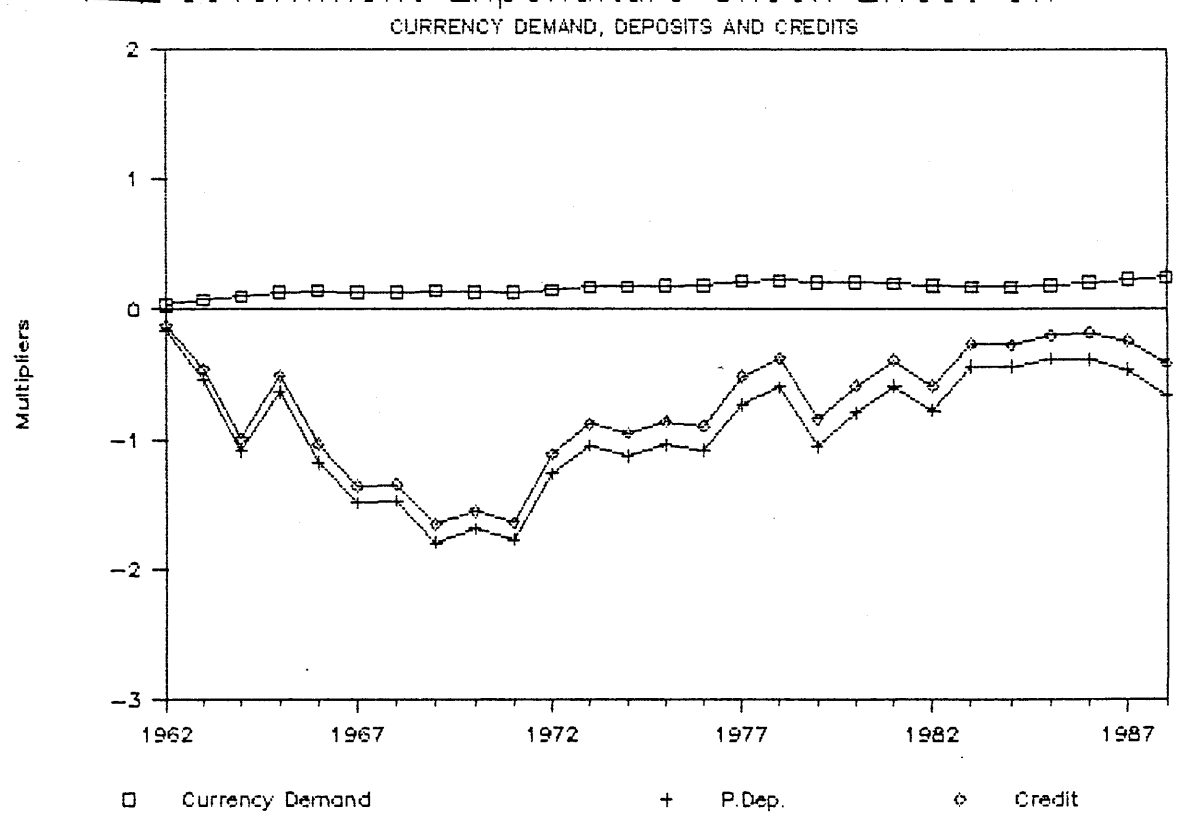


Figure (1.9): Government Expenditure Shock Effect On PRIVATE EXPENDITURE AND TOTAL IMPORTS

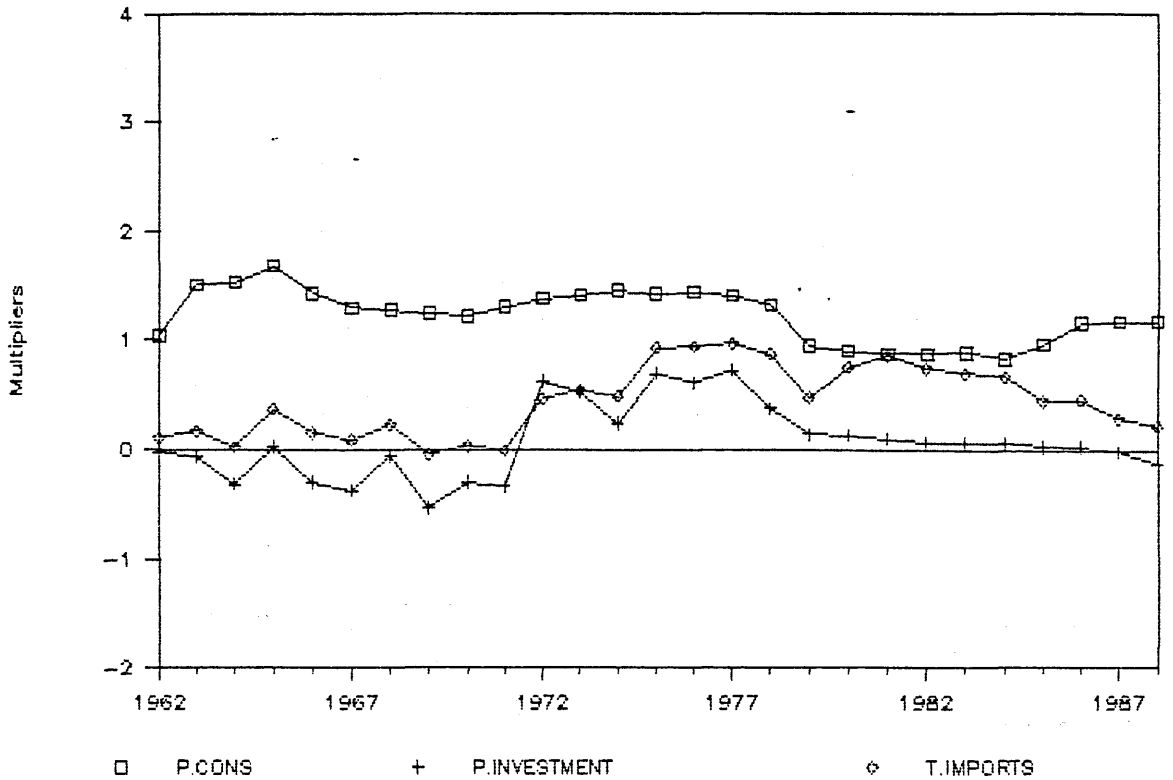


Figure (1.10): Tax Revenue Shock Effect On GDP

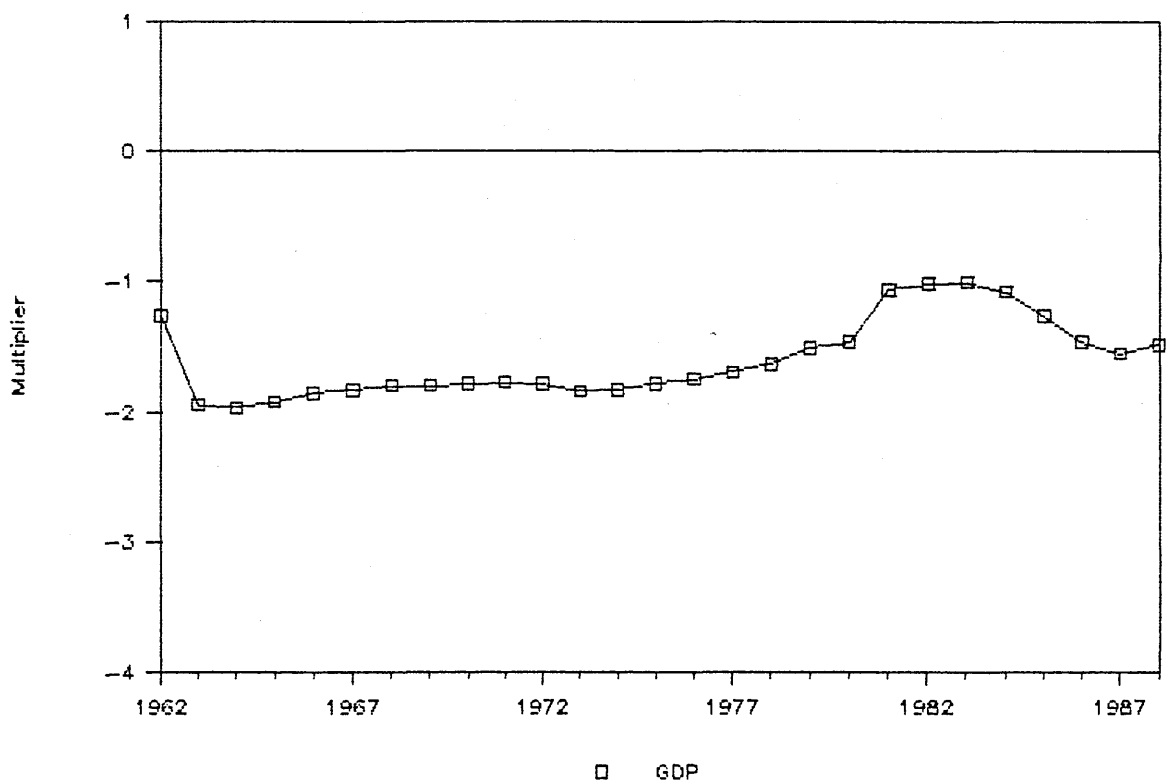


Figure (1.11): Tax Revenue Shock Effect On Currency

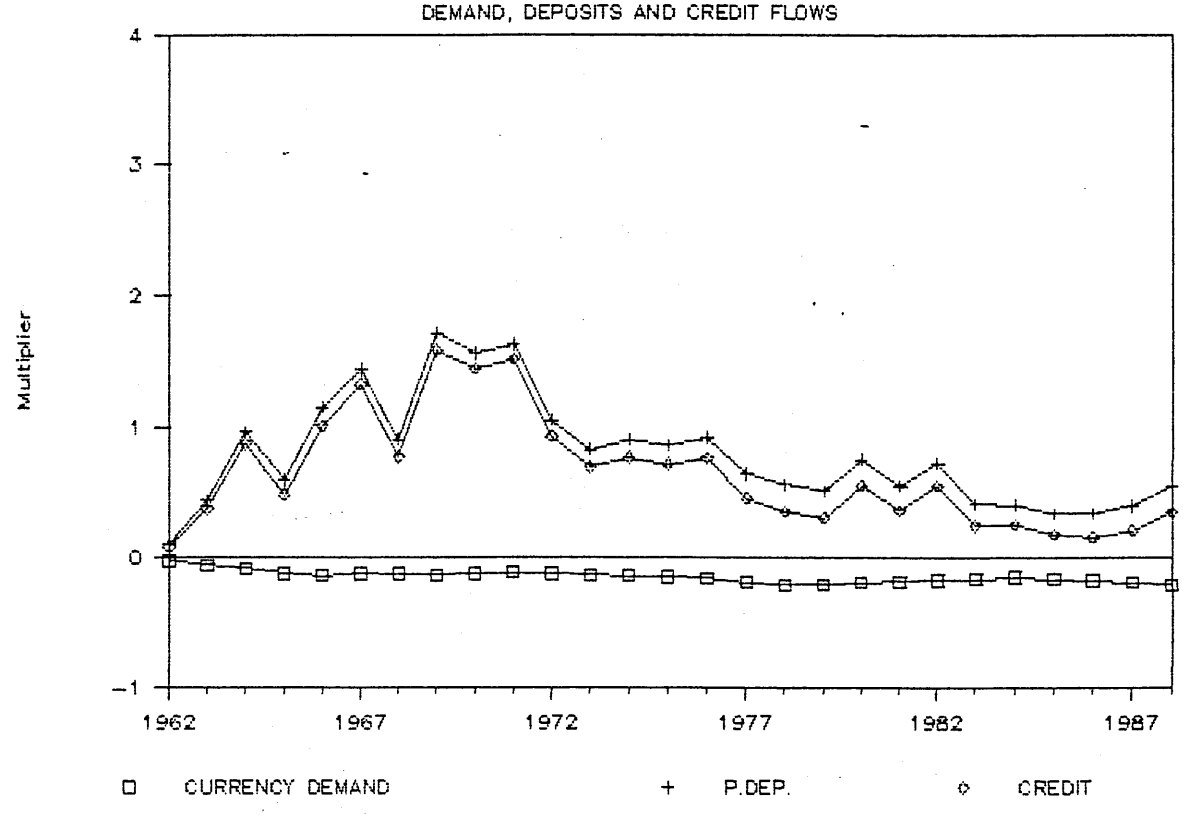
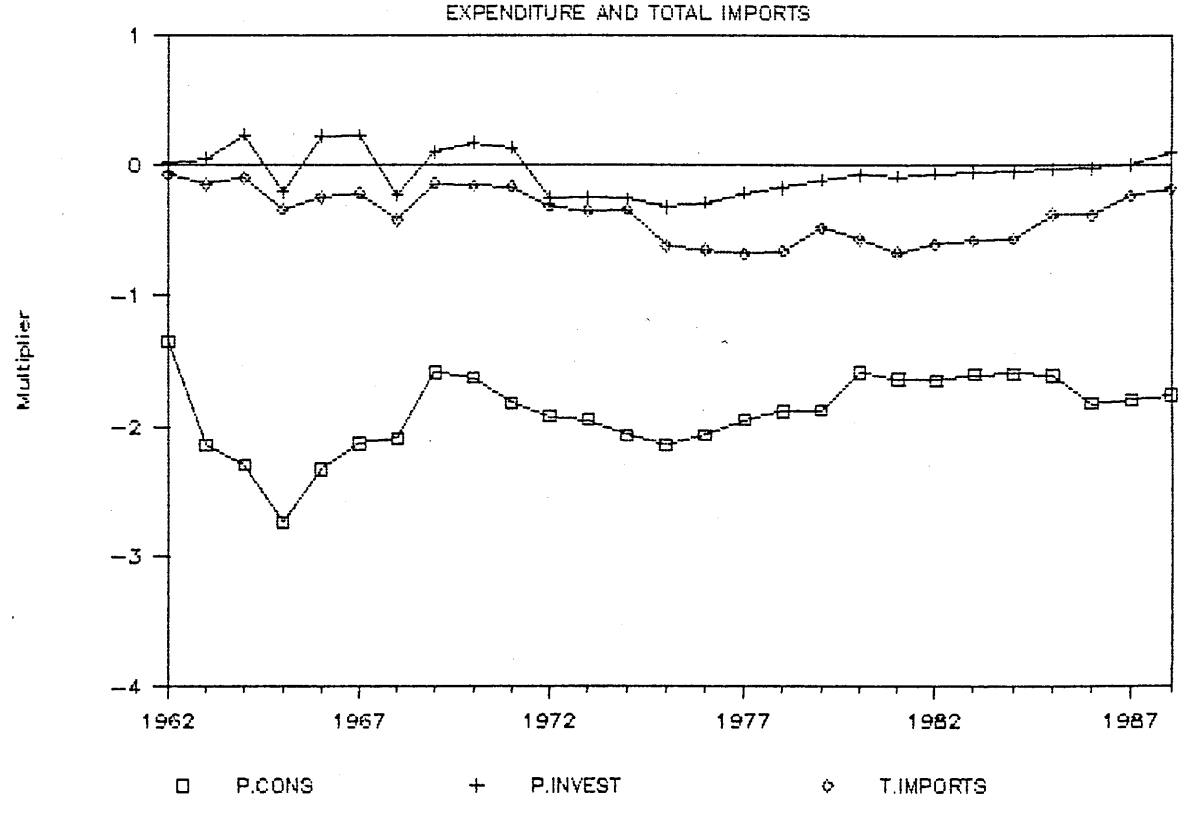


Figure (1.12): Tax Revenue Shock Effect On Private



Appendix 2:

Questions for Interviews with Bankers

Purpose: The interview questions are designed for Bankers to describe and explain the major factors that influence the operations of their banks with respect to the mobilization and allocation of domestic resources.

Interviewee's Background:

Bank : _____

Department:_____

Occupation: _____

Specialty: _____

Date _____

Questions

Section (A): Expansion of the Banking Network

(1) How many branches does your bank have ? (besides the headquarters)

In Khartoum Province _____

Other Urban Areas _____

In Rural Areas _____

(2) On the basis of costs and benefits and potential for growth, How do you rate the size of your bank ? (in terms of number of branches and customers)

Optimal _____ Reasonable_____Suboptimal _____

(3) Which of the following factors do you think have affected the horizontal expansion (i.e. number of branches) of your bank ?

	In Urban Areas	In Rural Areas
Limited demand for banking Services	_____	_____
High costs of providing the		

services _____ _____
Insufficient information About the
market (e.g on Incomes) _____ _____
Lack of capital _____ _____
Others----------

Section (B) Growth of bank Liabilities

(4) What is the minimum amount required by your bank for opening one of the following accounts ?

Current Account: £s _____
Time and saving deposit Account: £s _____

(5) Leaving income aside, how do you rate the importance of the following factors in the growth of deposits in domestic currency ?

Answers' code:
VI : means very important
I : means important
M : means moderately important
U : means unimportant

	Current A/c deposit	Time and Saving Deposit
Levels of interest rates	_____	_____
Inflation	_____	_____
Access to banks	_____	_____
Others ----------		

(6) Which factors do you think affect the transfer of remittances by Sudanese Nationals Working Abroad through banks ?

Low bank rates of exchange relative to black market rates _____
Inconvenience of banks as channels for remittances _____
Lack of banking habits on the part of those who make the remittances _____

Others ----------
---

(7) Does your bank offer any services or rewards that are particularly meant to attract customers ? (e.g Automatic or easy overdraft facilities)

Yes _____No _____
If Yes, please explain ----------

Section (c): Bank Lending Activities:

(8) What determines the relative size and direction (to broad economic sectors) of your Medium and long-term loans ? (Broad economic sectors refer to Agriculture, Industry, commerce .....etc)

	Size	Direction
Government credit policy (ceilings and sectoral allocation)	_____	_____
Bank own policy	_____	_____
Profitability or market forces	_____	_____
Differential rates of interest	_____	_____

Others ----------

(9) Does your bank have specific lending policy towards real capital formation in rural or traditional subsectors versus urban subsectors?

	Modern or urban	Traditional
Agriculture	_____	_____
Industry	_____	_____
Transport	_____	_____
Estate	_____	_____
Commerce	_____	_____

Others:----------

(10) What are the major factors that influence lending to borrowers in the traditional subsector ? (Use answer codes in (5))

Low returns on loans	_____
High risk	_____
Lack of marketable collaterals	_____

Insufficient information about projects _____
Others :----------

(11) Do you think that the Loan-deposit ratio of your bank (say in the last 5 years) is optimal ?

Yes _____ No _____
If No, please answer (12)

(12) Which factors have contributed to your bank's loan-deposit ratio being suboptimal ?

Legal reserve requirement policy _____
Credit ceilings policy _____
Low official lending rates of interest _____
Lack of profitable lending opportunities _____
Others ----------

(13) How frequent does your bank use the following documents in support of an application for each of the two types of credit facilities ? (i.e. short-term credit vs medium and long-term credit)
Answers' code:

A : means Always
N : Normally
S : Sometimes
R : Rarely
NE: Never

	Short-term credit	Medium and long-term credit
Feasibility studies prepared by the Borrower	_____	_____
Bank's independent assessment of the project	_____	_____
Accounting statements (e.g Income statement, balance sheet . . etc.)	____	_____
Collaterals offered	_____	_____
Information on firm's past operations (e.g purchases, sales.)	_____	_____

Others ----------

(14) Does your bank have any direct participation in the capital of firms in the following sectors ?

Agriculture _____ Industry _____
Transport _____ Estate or Construction _____
Commerce _____ Others:----------

(15) Does your bank explore lending opportunities, say by conducting feasibility studies and advertising projects or expressing intentions to provide credit to a certain category of investment ?

Yes _____No _____
If yes, please explain ----------

(16) Does your bank provide technical and/or managerial assistance to borrowers ?

Yes _____No _____
If Yes, answer (17) and (18)

(17) In which sector ?

Agriculture _____Industry _____Transport _____
Estate or construction _____Commerce _____
Others----------

(18)Area of assistance:
Technical (e. g engineering) _____ Accounting system _____
Managerial organization _____ Marketing _____
Others: ----------

Section (D) : Policy issues

(19) What do you believe should be the direction of the following policies for banks to play a more profound role in the mobilization of domestic resources ?

1. Interest or profit rate policy:
(a) Deposit rates

(b) Lending rates
---

2. Legal reserves policy:

---

3. Credit Policy:

(a) Ceilings

(b) Sectoral allocation

---

4. Exchange rate and foreign exchanges policy:

---

5. Profit tax policy
